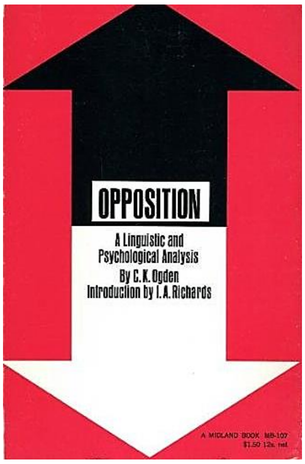
Theoretical Backup Two
for the Lexicon of *Finnegans Wake*:
Volume Fifty-Six



C. K. Ogden

The only professional British linguist who succeeded to provide a recording of the voice of James Joyce,
and the very first translator of Ludwig Wittgenstein into English.

Opposition

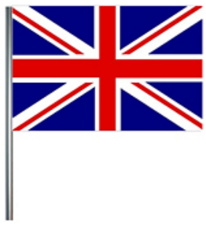
A Linguistic and Psychological Analysis.

Edited by
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> "One of the best discussions of 'Oppositeness' is Charles Ogden's book entitled *Opposition*."
>
> John Lyons

Recommended Reading:

C. K. Ogden: *The Meaning of Meaning*
C. K. Ogden: *Opposition*
C. K. Ogden: *Basic English*



Contemporary Literature Press
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Bucureşti 2013







This "theoretical insert",

Volume 55, Volume 56, and Volume 57,

is dedicated to

Professor CARLA MARENGO—

a most remarkable teacher of English Literature,

and thorough researcher of Joyce.

Monte Carlo, Noël 2013

George Sandulescu







The Turin Shroud

Theoretical Backup for the Lexicon of *Finnegans Wake*

Edited by **C. George Sandulescu**

Charles Ogden (1889-1957) was a linguist and a language philosopher: to him the word was as real as any other object in his hands. He demonstrated this by recording the very voice of James Joyce himself. The reading was made in August 1929 at King's College, London. By mentioning the year of that recording, we inevitably notice that the first quarter of the twentieth century grouped together quite a number of remarkable events. 1. The phonograph had been invented before 1900. 2. Tom Stoppard, in his play *Travesties*, describes how, in 1917, in Zurich, Joyce, Tzara, and Lenin sat not far one from the other in the very same room. 3. The BBC came into being in 1922. 4. During the same year, Ogden published his own translation into English of Wittgenstein's *Tractatus Logico-Philosophicus*, which had been written in German the year before. 5. The same year, 1922, saw the publication of Joyce's *Ulysses* and Eliot's *The Waste Land*. Whether Joyce had read Wittgenstein is the great question that nobody can answer. 6. Ogden's own *The Meaning of Meaning* was published in 1923: it made the relationship between sound and meaning the essence of Modernism. 7. In the 1930's,

Charles Ogden (1889-1957) este cunoscut ca lingvist şi filosof al limbajului: cuvântul, pentru el, era o realitate concretă. Acest lucru l-a demonstrat atunci când a înregistrat pe disc vocea lui James Joyce însuşi. Înregistrarea a fost făcută în august 1929 la King's College, Londra. Tot în primul sfert al secolului XX s-au mai petrecut o sumă de evenimente importante. 1. Înainte chiar de anul 1900 s-a inventat fonograful. 2. Tom Stoppard îşi construieşte piesa *Travesties* pe ideea că, în 1917 la Zürich, Joyce, Tzara şi Lenin s-au aflat împreună în aceeaşi încăpere. 3. În anul 1922 a luat ființă BBC. 4. În cursul aceluiaşi an Ogden a tradus în limba engleză *Tractatus Logico-Philosophicus*, pe care Wittgenstein îl publicase în germană cu un an înainte. 5. Tot în anul 1922 au apărut *Ulysses* de Joyce şi *The Waste Land* de Eliot. Rămâne fără răspuns pentru moment întrebarea dacă Joyce l-a citit ori nu pe Wittgenstein. 6. Ogden a publicat *The Meaning of Meaning* în 1923, carte care anunța că esența Modernismului era relația dintre sunet şi sens. 7. În jurul anului 1930, Ogden mai publică două volume importante: *Opposition* şi *Basic English*. John Lyons, autor de manuale,

Ogden published two other major books, *Opposition*, and *Basic English*. The textbook-writer John Lyons considered Ogden's *Opposition* to be one of the best discussions on the subject.

The reason we are publishing Ogden's books now, as a theoretical backup for James Joyce Lexicography, has something to do with the fact that there is a close relationship between Ogden's two major achievements. One achievement was that he made publicly known the recording of Joyce reading a fragment of the book he was writing in 40 languages at once. Ogden's second great achievement was Basic English: he believed that English could be, and was, in fact, the key to the one and only international language. Ogden's ideas of Meaning, Opposition and Basic English seem to lead straight into Joyce's own thoughts constantly hovering in his mind during the 17 years while he was writing *Finnegans Wake.*

Quite remarkable is the fact that Alexandru Graur, member of the so-called Academy of the Socialist Republic of Romania, wrote a book in which he described Basic English not only as an "imperialist" act, but also as the most "reprehensible attempt".

Ogden' three books, now grouped under the heading **Theoretical Backup**, posit major questions for Joyce researchers: **What made the British linguist Charles Ogden record James Joyce reading from a book far from being finished at**

considera *Opposition* a fi una dintre cele mai bune discuții pe această temă.

Rațiunea pentru care publicăm în acest moment cărțile lui Ogden, ca fundament teoretic al seriei lexicografice Joyce, este aceea că Ogden a realizat două lucruri importante, care sunt strâns legate între ele. Primul este că a făcut cunoscută lumii vocea lui Joyce citind un fragment dintr-o carte în care se exprima în 40 de limbi străine diferite în același timp. Al doilea este *Basic English*: Ogden era încredințat că limba engleză este singurul drum către o limbă unică internațională. Ideile lui privind sensul, opoziția şi *Basic English* duc drept la gândurile care trebuie că l-au obsedat pe Joyce în cei 17 ani cât a durat până ce a terminat de scris *Finnegans Wake.*

Nu este lipsit de interes faptul că Alexandru Graur, membru al aşa-zisei Academii a Republicii Socialiste România, a scris şi el o carte în care descria *Basic English* drept o "încercare imperialistă şi condamnabilă."

Grupate în secțiunea de fundamentare teoretică, cele trei volume de Ogden ridică o sumă de probleme esențiale pentru cerecetătorii operei lui Joyce: **Ce anume l-a făcut pe lingvistul britanic Charles Ogden să-l înregistreze pe James Joyce citind un fragment dintr-o carte pe care nici măcar n-o terminase încă? Ce intenție teoretică leagă oare volumele lui Ogden de înregistrarea vocii lui Joyce, singura înregistare, de altfel, a vocii lui Joyce până în ziua de azi? Şi,**

the time? What theoretical threads can possibly connect Ogden's major books to the recording of Joyce's voice, the only one of its kind to this day? And, last but not least: Why exactly did Joyce accept to be recorded?

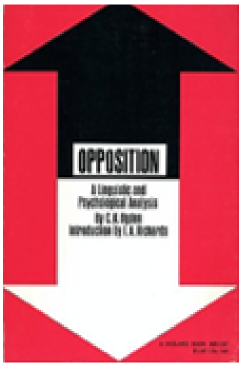
We, as the publishers of this series, do hope the diligent reader will certainly manage to find his own answers.

nu în ultimul rând, de ce oare a acceptat Joyce să fie înregistrat de Ogden?

Autorii acestei serii teoretice speră că cititorii atenți vor dezlega aceste enigme, fiecare în felul lui, desigur.

C. George Sandulescu & Lidia Vianu

Theoretical Backup Two
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Charles K. Ogden: *Opposition, A Linguistic and Psychological Analysis*, Bloomington, Indiana University Press, London, 1932.
Al Graur: Fondul principal al limbii române, Editura Ştiinţifică, Bucureşti, 1957, pp 110-111.
I. A. Richards: "Some Recollections of C. K. Ogden", in *Encounter*, September 1957, pp. 10-12.
John Lyons: *Introduction to Theoretical Linguistics*, Cambridge University Press, 1968, p. 489. The best textbook at the time on theoretical linguistics available in Great Britain.

It is by coincidence rather than by special intention that we are reissuing *The Meaning of Meaning* at such a round and symbolic date.

N.B. This Lexicographic Series as a whole is primarily meant as **teaching material** for the larger half of Continental Europe, which, for practically three quarters of a century, was deprived of ready access to the experimental fiction and poetry of the world. All Western literary criticism was also banned. Hence, the imperative necessity of re-issuing a considerable amount of post-war discussions. **The Publisher.**

If you want to have all the information you need about ***Finnegans Wake*****,** including the full text of *Finnegans Wake* line-numbered, go to the personal site **Sandulescu Online**, at the following internet address:
http://sandulescu.perso.monaco.mc/

Given the importance of James Joyce's *Finnegans Wake*, all postgraduates in English, Romanian, French, and German work on this research project as part of their normal and regular academic assignments.

L V
Academic Director C L P

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Theoretical Backup Two for the Lexicon of *Finnegans Wake*

Charles K. Ogden: *Opposition*

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Vol. **38.**	A Lexicon of **Selective Segmentation** of *Finnegans Wake* (The '*Syllabifications*'). FW Episode Three. http://editura.mttlc.ro/sandulescu-segmentation-of-fw.html	193 pp	9 September 2013
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You are kindly asked to address your comments, suggestions, and criticism to the Publisher: lidia.vianu@g.unibuc.ro

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Theoretical Backup Two for the Lexicon of *Finnegans Wake*

Charles K. Ogden: *Opposition*

6

C. George Sandulescu

Only Connect



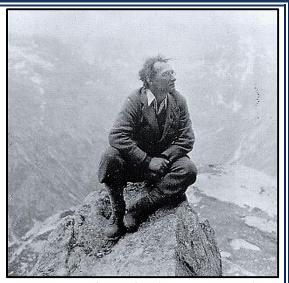
Charles Kay Ogden
(1889-1957)



Ludwig Wittgenstein
(1889-1951)

A stupid man's report of what a clever man says can never be accurate, because he unconsciously translates what he hears into something he can understand.

Bertrand Russell

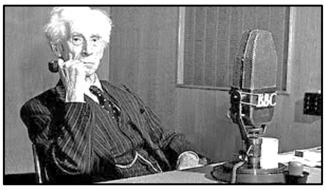


I. A. Richards (1893-1979)
visiting the Alps, 1930.



Alexandru Graur
(1900-1988)





Bertrand Russell (1872-1970)

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"The following pages, some of which were written as long ago as 1910, have appeared for the most part in periodical form during 1920-22, and arise out of an attempt to deal directly with difficulties raised by the influence of Language upon Thought."

Charles K. Ogden

(Preface to the first edition. Magdalene College, Cambridge, January 1923.)

PREFACE

To the First Edition

The following pages, some of which were written as long ago as 1910, have appeared for the most part in periodical form during 1920-22, and arise out of an attempt to deal directly with difficulties raised by the influence of Language upon Thought.

Charles K. Ogden: *Opposition*

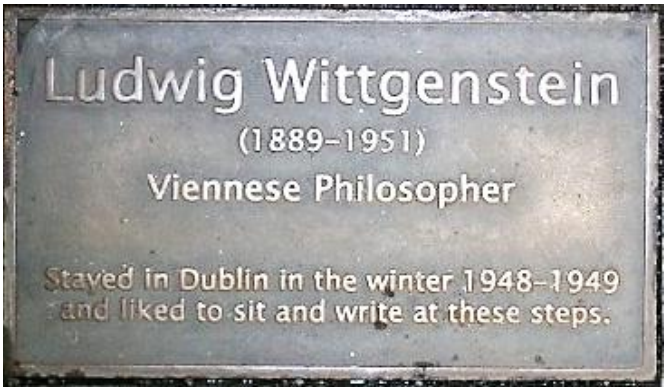
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Ludwig Josef Johann Wittgenstein	(1889-1951)	*Tractatus Logico-Philosophicus* (**1921**), translated into English by Charles K. Ogden in 1922
Charles Kay Ogden	(1889-1957)	*The Meaning of Meaning* (**1923**)
James Joyce	(1882-1941)	*Finnegans Wake* (**1922-1939**)

The only recording of James Joyce reading a part of "Anna Livia Plurabelle", lasting eight andf a half minutes, was made by Charles K. Ogden in London, in August **1929**.

If Joyce knew a great British linguist personally and knew him well, that was Charles Ogden, who was actually the only professional British linguist who succeeded to provide a recording of the voice of James Joyce. Charles Ogden is the distinguished London linguist who recorded Joyce's voice, while being at the same time the very first to translate Ludwig Wittgenstein into English. If Joyce knew Ogden, he must have been acquainted with Wittgenstein's *Tractatus*.

The question "Did Joyce know Wittgenstein?" has an answer, then: Charles Ogden is the key to it.







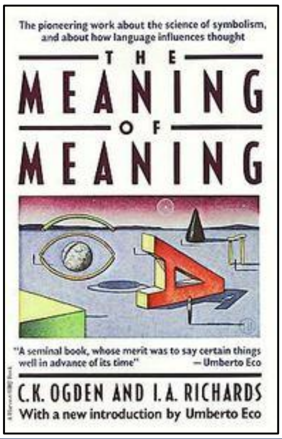


By a strange coincidence, this Ogden cover carries the Irish and Romanian flags intermingled!

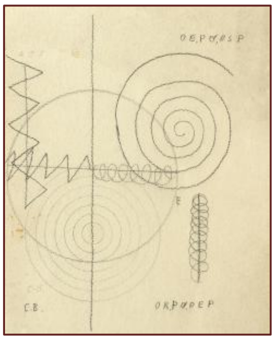
The Irish flag vertical from the flagpole is green, white, and orange. The Romanian flag vertical from the flagpole is blue, yellow, and red. The Ogden cover is green, yellow, and red. Further coincidence, both countries are the only ones who use the French word tricolour most frequently to refer to their respective national flags! The way the British call their own flag the Union Jack.

Charles K. Ogden: *Opposition*





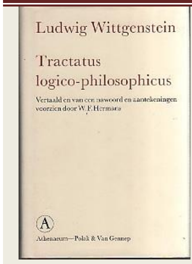




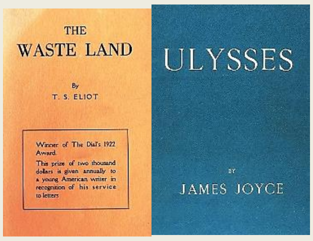
Joyce, in our opinion, has learnt more from his drinking sessions with the Romanian sculptor Constantin Brancusi, as well as from the very recent writings of Charles Ogden, than from all the famous works of writers like Marcel Proust, or Rabelais, the only exception, perhaps, being Lewis Carroll.

Charles K. Ogden: *Opposition*

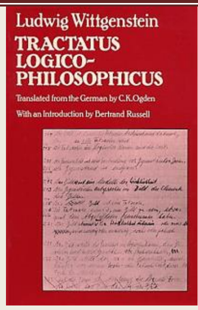
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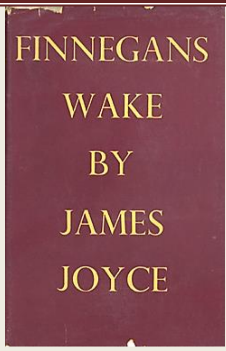
1922



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1922-1939

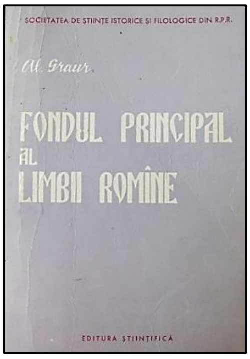


1934

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1957



Alexandru Graur

În încercările lor desperate şi zadarnice de a impune întregii lumi limba engleză, imperialiştii anglo-americani au recurs în ultimul timp la o stratagemă puțin inteligentă, la o camuflare a limbii engleze. Aşa-zişi oameni de ştiință, la ordinele lor, au creat „limba" botezată *basic-English,* un fel de surogat de limbă engleză, o limbă engleză simplificată la maximum. Basic-English are numai 850 de cuvinte (în teorie, căci în practică, prin diferite trucuri, se mai adaugă cuvinte, cu miile), astfel încât cel care vrea s-o învețe să nu aibă greutate prea mare. De curînd s-a luat inițiativa inventării unui *basic-French.* Aceste încercări sînt sortite unui eşec sigur, căci ele caută să transforme engleza (şi franceza) într-un fel de

In its desperate and futile attempt to make English the language of the world, Anglo-American imperialism has lately decided to camouflage the English language, which is not a very bright thing to do. Some so-called scientists in its pay have created Basic English, which is a kind of surrogate English, a drastically simplified variety of English. Basic English only has 850 words in it, theoretically: in fact, by means of a number of tricks, thousands of words find their way in there. The idea behind all this is to prove that learning English is very easy. Basic French has now been concocted as well. These attempts are of course doomed to fail. They simply turn English and French into a collection of charades: when an

colecție de șarade: în locul termenilor exacți, care nu figurează în lexicul *basic*, noțiunile sînt redate prin perifraze teribil de lungi şi complicate şi, de altfel, inexacte în ce priveşte sensul. Desigur acesta nu este singurul cusur al limbilor *basic* şi încercarea însăşi este condamnabilă. Dar în prezenta lucrare mi s-a părut interesant să analizez felul cum creatorii acestei aşa-zise limbi au făcut alegerea cuvintelor pe care le-au acceptat în vocabularul redus.

Basic-English are 600 de substantive, 150 de adjective, 16 verbe, iar restul sînt instrumente gramaticale. Prin urmare „savanții" la ordinele imperialismului au luat calea exact contrară celei pe care merg limbile reale. Am constatat că în fondul principal capătă importanță tot mai mare verbele, în dauna substantivelor. Basic însă desființează aproape cu totul verbul, păstrînd numai 16 cuvinte din această categorie, pe care de fapt le transformă într-un fel de auxiliare, rămînînd ca ideea de acțiune să fie exprimată prin substantive, cam în felul în care am văzut că procedează limba turcă. Am arătat mai sus că acest procedeu înseamnă o alterare, o sărăcire a limbii. Prin urmare nu numai că limba engleză este intenționat degradată, adusă la nivelul unei limbi primitive cu vocabular sărac, dar nici măcar alegerea acelor cuvinte care au

exact term is not included in the basic list of words, it must be described by endless, complicated circumlocutions which are bound to betray the real meaning. There are more disadvantages to basic languages than this, and, on the whole, they are a reprehensible attempt. All I mean to do in this particular study, though, is just to examine the way in which those who created these so-called languages have decided which words go into their restricted list and which do not.

Basic English has about 600 nouns, 150 adjectives, 16 verbs, while the rest are grammatical tools. These would-be scientists that serve imperialism seem to have gone in the opposite direction taken by living languages. We cannot fail to notice that most of the words that make up the main lexical body of a language tend to be verbs, not nouns. There are almost no verbs in Basic English: just 16 words of that kind, which are actually a kind of auxiliaries, while actions are rendedred by means of nouns, as it is done in the Turkish language. As I said, the consequence is that Basic English is defaced and impoverished as a language. English is degraded, it is pushed back to the stage of a primitive, limited vocabulary, and besides, those words have been chosen according to a principle that clearly contradicts the

fost menţinute nu e făcută pe linia justă a dezvoltării limbilor moderne, ci împotriva acestei linii. Se înţelege că dacă cineva se constrînge la folosirea acestui vocabular limitat şi prost ales, el nu va fi în stare să exprime nici o idee cît de cît mai adîncă.

progress of all modern languages. We are bound to infer, then, that whoever restricts his ability to communicate to this small, badly chosen list, will hardly ever manage to convey any significant ideas at all.

(*Fondul principal al limbii române*. Editura Ştiinţifică. Bucureşti. 1957. pp 110-111.)

Alexandru Graur (1900-1988) has been Professor of General and Theoretical Linguistics at the University of Bucharest (1946-1970), member of the Academy of the Romanian Socialist Republic (1948-1988), and director of „Editura Academiei", the publishing house of the Romanian Academy (1955-1974). He has been the most outstanding Marxist-oriented linguist of Romania. He got his degree from École Pratique des Hautes Études in Paris in **1929**, and his PhD at the Sorbonne, with a thesis about Indo-European linguistics.

"When I was working as editor and reporter of the Romanian Broadcasting Corporation, I was asked to interview Alexandru Graur. The expected a long interview. Graur received me in his office: he was Head of *Editura Academiei* at the time. He had absolutely no English. The interview, on the other hand, was meant to be listened to by the English-speaking world, so it had to be in English by all means. I transcribed his text — which I had translated into English myself — using the International Phonetic Alphabet. We practised for a few hours. This is how Alexandru Graur gave his one and only interview in English." **C. George Sandulescu**

If we spoke a different language,

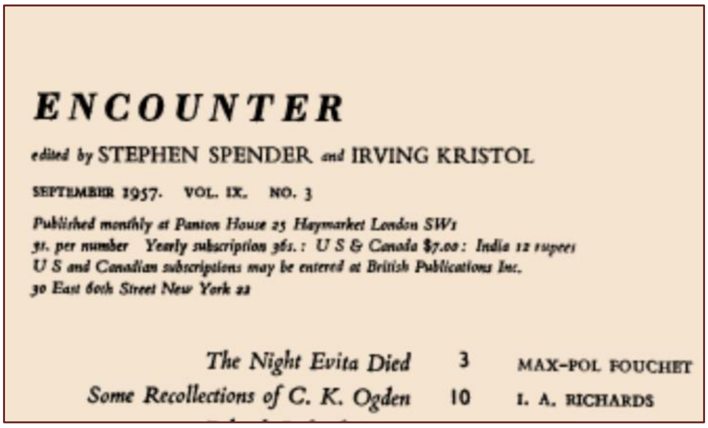
we would perceive a somewhat different world.

Ludwig Wittgenstein



I. A. Richards

1957



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I. A. Richards

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Charles K. Ogden: *Opposition*

Charles Kay Ogden first appeared to me at a lunch in Magdalene to which my Director of Studies, F. R. Saler, had asked me as a freshman in trouble: I had found myself, after a term or so of history, possessed by some heartfelt objection to reading any more of it and was begging to be allowed to try something else. The other guest was a small commanding undergraduate also of Magdalene with a large pale head and disconcerting glasses. He was some three years older than myself and ready to discourse all through the afternoon out of preternatural knowledge, and in a beautiful and tireless voice, on The Choice of Subject. Our host left us early to play tennis, and I listened on and on to what the leading lecturers in almost every field would soon be telling me if I did not take due care. "Will you change your mind, if I convince you?" used to be one of Ogden's openings. I suppose I was convinced. (Later we came to count together the number of convictions in a philosopher's record.) At least, I let him lead me off to his attic in the Pepys Building and provide me with books which could, he said, ease a beginner's steps into Moral Science. I still feel at times that I would have done well to have read them.

"Ogden, what do you do with all these books? Do you read them?" This was the searching question put by the Master, S. A. Donaldson, as he threaded his way through the accumulations in that attic. The strange thing is that a just answer could have been: "On the whole, yes!" If you looked closely you would find that many of them held many slips of paper with annotations and that in the margins were Ogden's peculiar, minutely pencilled indications. He had a clairvoyant's knack of opening any book at the page most relevant to one of his polymathic purposes. But this I only learnt after my next serious meeting with him, over six years later.

That meeting can be dated to a minute. At noon on 11th November, 1918, an excited Frenchman leapt off his cycle in Kings Parade and cried: "They told me the War was over! But look!" A grand piano came crashing out through the plate glass window of Ogden's Cambridge Magazine Book Shop and Art Gallery. As we watched, another followed. Medical students, flown with the spirits of the occasion, were smashing it up. This looked, and was, rather dangerous; but there was Ogden standing in the next doorway calmly watching the assailants. He was chewing his lips a little and pressing the corner of his eye with his finger-tips —a trick he had for improving the acuity of his vision. I joined him, though I was largely in the dark, along with most other people, as to what was happening.

At that time I rented a room from him above one of his shops, at 1 Free School

Lane, and knew him only remotely as my landlord. About midnight, he came in to ask whether I could identify any of the rioters, if need be, to help him with his action for damages against the town, and told me the story. He had founded his *Cambridge Magazine*, a penny University Weekly, astonishingly successful from the start, against all advice. But there was in him — behind all his freaks and humours — a central clarifying insistence, a flame of curiosity and impatience, a disdain for the acquiescences of sloth, a trust in mind which, even as an undergraduate, made him one of the forces of his time. That was why, with none of the traditional advantages, he had nearly all the great — from Hardy round to Shaw — generously ready to write for him. It was most encouraging. But when he proposed to go on from journalism into the book business, he had been warned that he must give up, if so, all academic ambitions. With the War the *Cambridge Magazine* had developed a review of the foreign press and soared up to a circulation of some 25,000. It was invaluable to the Foreign Office, and to would-be informed opinion, but naturally became, of course, a target for the Blimps of those days who did their best to shoot it down with paper-rationing. Hence, the multiple *Cambridge Magazine* Book Shops to provide sorting space in which Ogden could skim the cream from bulk purchases of pulp-worthy books. He would sort books for hours — from 1.00 a.m. on — after his day's work. Overheard from the foot of a ladder during one such sorting session: "It's long since I perused a volume. Must stop this soon! Must stop this soon!" Over the rest of his paper-supply measures, mystery had to hang.

To all this and to all Ogden's current hopes and endeavours the day's doings had been the death-blow. He knew it; though why the blow had fallen was not at all clear. Ogden's style of comment could be free and stinging. How tell an opponent he doesn't know what he is talking about? Why not in verse?

The rise of Adam's Apple,
You fallen son of Eve,
Enables you to grapple
With things you can't conceive.

How report an inquest? "The Coroner found that the customers were not poisoned by Hawkins but by some fish." Too much of this sort of thing could lead to resentments which combined easily with impatience over discussion of War Aims.

After collecting my useless impressions of the rioters, Ogden started off for "Top Hole", his fantastically cluttered attic above MacFisheries in Petty Cury.

Half-way down the tightly twisting stairs, under an aged gas jet, he stopped to make some remark upon a recent controversy in *Mind*. An hour or two later when we went downstairs, the main outline of *The Meaning of Meaning* was clear enough, and plans for the joint Work to embody it were in being.

The remark is attributed to Robert Hutchings: "When someone hands you a lemon, see if you can't make some lemonade." Acting in this spirit, Ogden, within a few weeks, had transformed his defunct *Cambridge Magazine* (it had thousands of subscribers to be taken care of) into a handsome Quarterly, its double columns so laid out that one page would hold type for four pages of our future Work. We wrote its first draft as a series of articles under various names, using for more experimental or frivolous passages Ogden's famous pseudonym "Adelyne More" (Add a Line More: I spell this out because I have met so many who claimed to be the only one or the first, to "detect the imposture." Ogden, it is true, took considerable pains to substantiate the fictive authoress of his *Fecundity versus Civilisation* with photos of a pretty secretary and of her military wedding: an arch of swords at the church door; I believe I dissuaded him from announcing triplets).

Work on the projected Work went in intermittently for some years, Ogden meanwhile becoming more and more centred in London, where he was organising his two great series: The International Library of Psychology, Philosophy, and Scientific Method and The History of Civilisation. To both he acted as General Editor. I have sometimes thought that the first of these may have been in part invented to serve as a reassuring frame for the unconventionalities of the *Meaning of Meaning*. Some of the most distinctive parts were earlier pieces that Ogden had had lying by him unfinished: one such was the "Word Magic" essay which appeared in fuller and more striking form in the *Cambridge Magazine* and had to be cut down for the book (with an apologetic promise of an independent volume-never, alas, to be written). Another was the terminal fable: "Realise thyself, Amoeba dear, said Will..." As little by little we learned to understand (and write) one another's language, the book advanced. Much of it had to be written in the small hours after Ogden's arrival by the last train from London, and without cocoa I hardly think much would have resulted. He held the pen, on the ground that his hand was more legible to his typist than mine. And he sat while I walked up and down.

There were incessant interruptions: translation work in Wittgenstein's *Tractatus* (without Ogden's energy and his enlistment of the young Frank Ramsay's talent there might well never have been any English version), on Vaihinger's *Als Ob*, on Jules Romain's *Eyeless Sight*, and scores of others. There was an opinion on the

purchase of Stonehenge (Ogden could not easily believe that he could not find a very good use for it). There was the wind to raise by various means ever and again. In those days, Ogden suffered frequently from what he described as "hand-to-mouth disease"—what struck me was that his mouthfuls had to be somewhat large. One welcome interlude arose through a chance summer juncture with James Wood in Cambridge and produced *Foundations of Aesthetics* — much aided by an ozone machine whose sparks, Ogden averred, generated Brighton air in the Fens. Certainly at about 3.00 a.m., while Ogden, pen in hand, enacted the death of Sardanapalus on a vast, high day-bed and Wood dis his Muller's exercises, the reel of seaweed (or Underground?) it emitted seemed to freshen up the argument.

The chapter on Definition in the "Beadig of Beadig", as we came to call it in memory of a frustrating cold in the head, led us into long discussions of the number of radically different ways there may be of telling anyone what any word may mean. This inquiry was the germ of Basic English. Ogden had long been deep in the history and theory of universal languages, and it was no long step from our account of Definition to the notion of a minimal English capable of serving all purposes. We played with the construction of this for a little — I recall the excitement of the initial moves. But we decided that it would distract us and delay the completion of the Work. It was Ogden who was to be singly and wholly responsible for the devising in detail of Basic English with the invaluable aid, through years, of Miss L. W. Lockhart, author of *Word Economy*. His Word List and its Rules shrank and expanded for a while, like an accordion as his resourceful, prehensive, and reconciling intelligence explored one set of possibilities after another.

This preliminary work and the tedium of the actual devising in part explain the tenacity with which Ogden, after the promulgation of Basic English, resisted proposals for further development. But there were more practical reasons: he had to have a fixed and finished system once he had decided to promote it. Another man might have published a series of papers or a general treatise on the simplification of English; but Ogden had the ambition to found and direct a Movement and I had curtailed this for the concerns of the *Meaning of Meaning*.

In the final crystallisation of Basic English, Ogden's Magdalene By-fellowship played a decisive part. His countless commitments, of which no one but Ogden ever knew more than a fringe, kept him in London. But the By-fellowship gave both a little respite from stress and the incentive to come out with something distinctive and substantial in return. Whatever the long-time verdicts may be, this at least can be said: with Basic English Ogden brought a sparkling stream of fresh thought into stables

which have for thousands of years very badly needed cleansing. And he took important steps towards making techniques in language instruction join the general accumulative advance in design characteristic of our times. But this is of his work. In his life he was gay, tireless as Socrates, sympathetic, imaginative, and quick in help, if salt and astringent in comment and wary in counsel.

(*Encounter*, September 1957, pp. 10-12.)



HAMLET:

Alas, poor Yorick! I knew him, Horatio: a fellow of infinite jest, of most excellent fancy: he hath borne me on his back a thousand times; and now, how abhorred in my imagination it is! my gorge rims at it. Here hung those lips that I have kissed I know not how oft. Where be your gibes now? your gambols? your songs? your flashes of merriment, that were wont to set the table on a roar? Not one now, to mock your own grinning? quite chap-fallen?

Theoretical Backup Two for the Lexicon of *Finnegans Wake*

Charles K. Ogden: *Opposition*

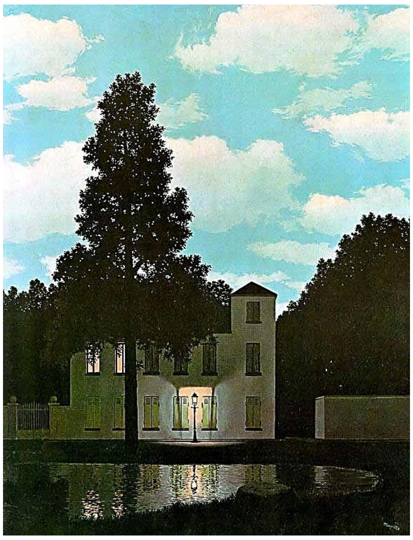
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C. K. Ogden

Opposition

A Linguistic and Psychological Analysis.

1932



Magritte



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I. A. Richards

Introduction

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Charles K. Ogden: *Opposition*

C. K. Ogden (1889-1957), could he have made one of his high and wide surveys today, would have been indeed gratified to note how fully his prescience as to the role of opposition has been justified. In more ways than can be easily listed, it is becoming a key conception in methodology. From submicroscopic physics on up through crystallography; through the biological means of continuance, the genetic codes for the species and for the cell; through the constancies in cultures and into the very keep of psychology itself, from which samenesses and differences, as we recognize them, hold and rule, *oppositions* of one or another of the types he was concerned to distinguish and de-confound are becoming our more and more indispensable instruments and controls of comprehension.

His essay, as the closing section of Chapter II ("A Fresh Start") hints, was for him the fulfillment of a long-standing promise. When he and I were, in the exuberance of youthful ambition, throwing together *The Meaning of Meaning*, one of the most tempting topics of Chapter Six, "The Theory of Definition," was Opposition. We postponed a proper treatment—as we postponed much else, including his *Verbal Magic* and *The Panoptic Method*—until Ogden could disentangle enough time from other cares. Little did we know then about the Hydra-like growth of obligations! Of these postponed tasks this extraordinary piece of original and seminal lexicological experimentation was the only one to be achieved. How he did it—amid his multifarious other activities—I cannot guess. But here it is.

As was his custom Ogden prepared himself for the attempt in two ways. One, by a "library cormorant" spell of omnivorous reading in whatever might be relevant or suggestive; secondly, by incessant conversation with all who could conceivably have anything to the point to opine. These conversations took place with an astonishingly numerous and variegated succession of people, tackled over coffee in one of Ogden's ever-growing congeries of Clubs, or over cocoa and biscuits at 1:00 A.M. What Ogden reports—e.g., in his third paragraph of Chapter III, "Analytical"—is a discerning digest of an immensely rich experience of verbal behaviour served by an enviably exact and retentive memory. He really did learn and remember what intelligent English-speakers had to say about how they understood and used their language. He thus placed himself in the best position to observe the distortions that specialists' training (not least that of philosophers and linguists) can inflict.

Characteristically, when Ogden comes to report his reading, his peculiar mockingbird wit often intervenes. I am not the only one to be uncertain whether it is

from Tarde, say, or from Ogden that I dissent. A proof this—I have often thought, as sufferer—of how closely Ogden could identify with the author he is reporting. Part of this is his concern for succinctness in essentials, which went along with his predilection for verbosity in the protective defense-entanglements.

Both these characteristics—an almost cryptic verbal economy in his statements of most importance; and a sometimes infuriating prolixity—are to be expected. The second of these mannerisms can (*experto crede*) be much alleviated by perceiving that a singularly encyclopedic mind (see Clifton Fadiman, *Reading I Have Liked*) is often diverting himself, and such of his readers as are in rapport, with parodies of academic pontification.

Much of Ogden's concern with Opposition sprang from his work on Basic English. If you persistently inquire into which words we can, in theory and in practice, *do without*, you soon find yourself asking such questions as, "Why is 'not white' so unsatisfactory to deal with, while 'not visible' or 'invisible' readily recommends itself as the opposite of 'visible'?" The design of Basic English, as of any systematically limited language, sends us back to the essential principles by which language works. And chief among these is Opposition. A theory of Opposition is thus *required* for *controlled* language use and language teaching. But Ogden went further than even this in seeing (Chapter I, "Introductory," paragraph 3) that oppositional considerations are necessarily relevant to identification of meanings for *any* word. He adds a limitation: "any word whose use may give rise to controversy." He would have agreed, however, that *any* word, given the unfortunate occasion, can set men at intelligential loggerheads.

The detail of how his reflections on opposition helped to shape Basic English will soon be available anew with the republication of the key texts: *The System of Basic English* and *The Basic Words* (Harcourt). The renewed interest in a limited (maximal service, minimum cost) English, as a world auxiliary, due to computer-controlled, satellite-conveyed communications and instruction-services, is discussed at length in my forthcoming *So Much Nearer Home: Towards a World English*, and *Manifesto: World-wide Education, Through English, Through TV, Now*, and with more detail in *Learning Every Man's English* by Christine Gibson and myself (Harcourt). I may perhaps add that the Appendix is a *jeu d'esprit* that does not represent more than a fleeting early phase in Ogden's thought about Basic English.

Opposition enters into all such projects in a further fashion which can be conveniently brought out by asking: "What sentences and what situations can best serve *the very beginning* of learning English as a second language?" Analysis and

experiment very strongly indicate that the key discriminations of space and time should be used. The oppositions between *here* and *there*, and between past, present, and future, in such sentences as

I am here. •

• ⟵ I was there.

I will be there. ⟶ •

can be given a triumphant obviousness and clarity—thanks to the biologic significance of the *here*↔*there* opposition and of the *was*↔*is*↔*will be* oppositions—which no other set can rival. They can be enacted and depicted more possessingly and more unmistakably than any others. Further: they can be *employed with significant variation* more compellingly than any others: *He* (*she, it*) *is* (*was, will be*) here (there) and so on. The learner can thus be led into intelligent meaning-charged USE of the language (as opposed to rote repetitions) sooner and more perspicuously and more rewardingly than by any other course. Through designed pressures of linguistic opposition he can be helped to see what he is doing, what he is saying, and how he is saying it.

All living use of language (as opposed to psittacism: one of Ogden's favorite words) depends upon the user's discernment of how what is being said differs, *significantly*, from other things that might be said instead. Perception of oppositions is thus the active principle of language—and of all *sign-situations*, as *The Meaning of Meaning* called them. To go more fully into all this—which developed just too late for Ogden's comments—the reader may turn to *Fundamentals of Language* by Roman Jakobson and Morris Halle (1956). Ogden, however, in quoting from Ludwig Fischer, "an opposition, the members of which are each the condition of the other" (e.g., *here*↔*there*) and in the stress he so rightly laid on Diagrammatics, as on Notation, shows himself to have been well ahead of his times in these as in other matters. His *Fecundity versus Civilisation*, for instance, published under the pseudonym, Adelyne More, was an undergraduate production.

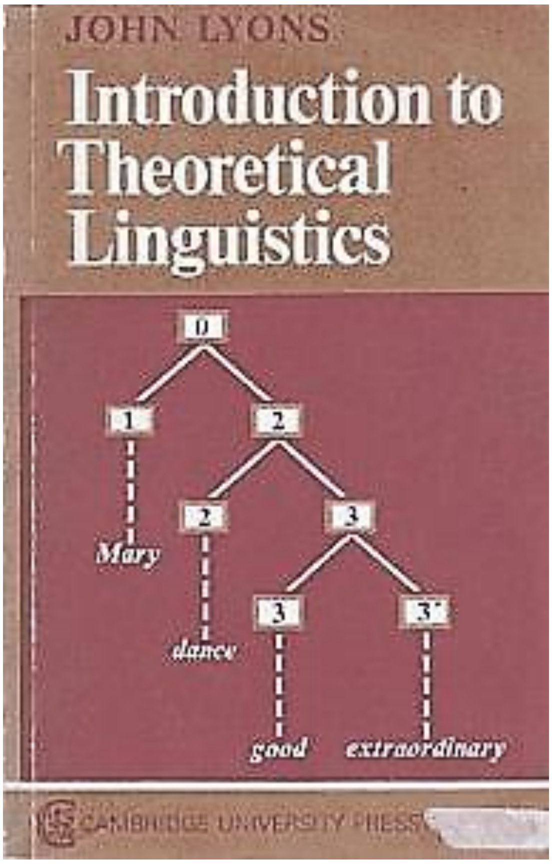
Whoever will reflectively peruse these few pages will find not only his interest but his acumen in linguistic explorations enhanced. But more, this little book may, in its new format, prove to be one of the clarifiers enabling the growing world culture to free itself from some of its most stultifying confusions.

April, 1967

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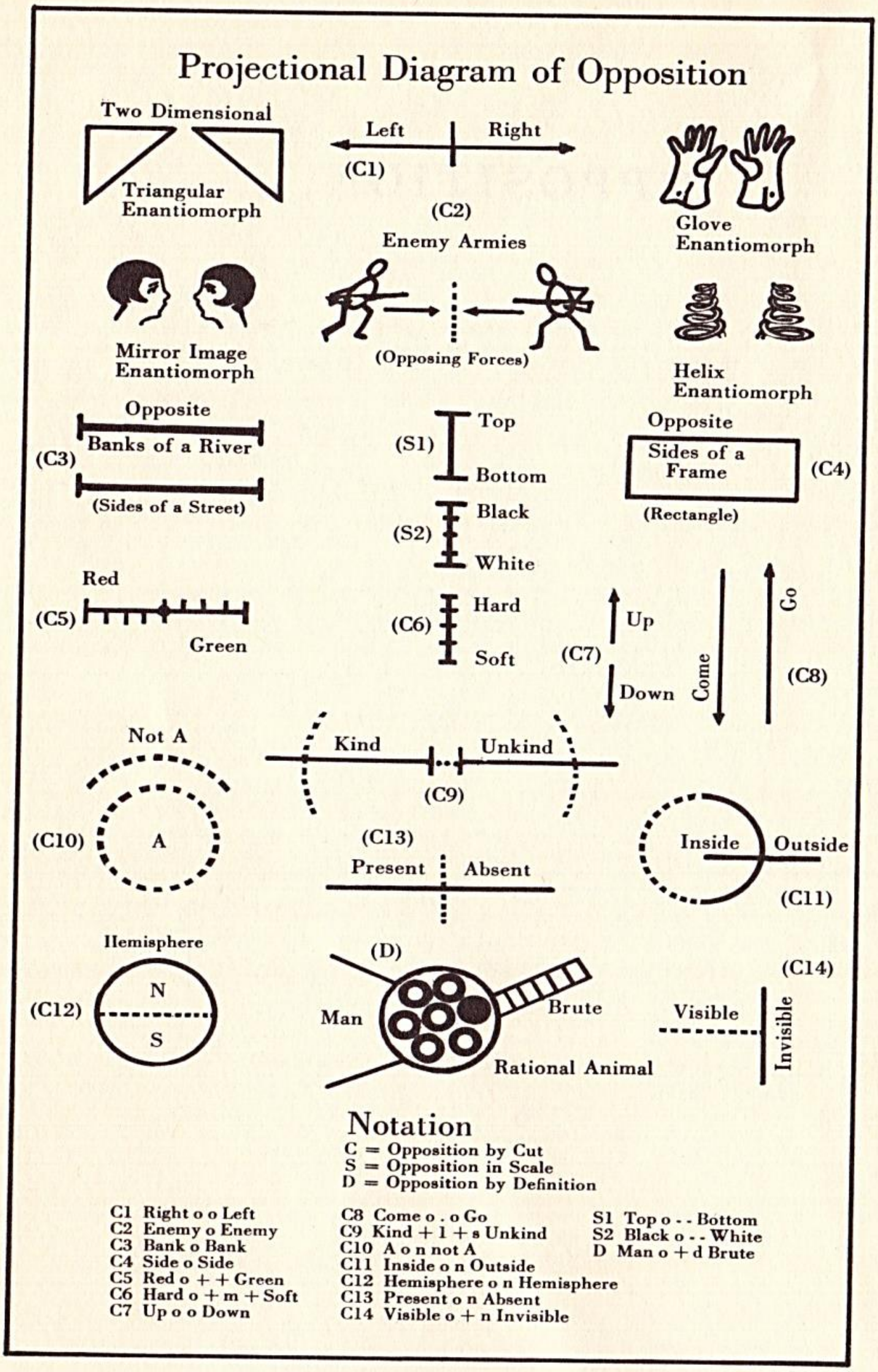


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OPPOSITION

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Charles K. Ogden: *Opposition*



1.

Introductory

The practical significance of an analysis of the nature of opposition may not be obvious. Both for the lexicographer, however, and for all work on the problem of a Universal Language, it is fundamental, and the differentiation of the various kinds of opposition is essential for any progress in the art of Word Economy.

Logic,[1] which professes to deal both with definition and its application, has been content with a brief treatment of the formal aspects of opposition, since only negation could be utilized in dichotomy and in the formal treatment of the syllogism. It has therefore been assumed that the hierarchical method of definition was alone relevant where accuracy was required. Nor has the elaboration of a genetic sub-structure proved more fruitful.[2]

It would appear, however, that the theory of opposition offers a new method of approach not only in the case of all those words which can best be defined in terms

[1] For a logical approach to Opposition, in relation to contrary and contradictory propositions, see Bradley, *Logic* (2nd Edition, 1922), Vol. I, pp. 145 ff, on the principle of Contradiction; and Bosanquet, *Logic* (2nd Edition, 1911), Vol. I, pp. 294 ff., on contradictory and contrary opposition. The trouble about such tenuously controversial exegesis is that even its accredited exponents are haunted by a sense of their irremediable inconclusiveness. "It is necessary before all things to bear in mind," says Bradley (p. 145), "that this axiom of Contradiction does not in any way explain, that it can not and must not attempt to account for the existence of opposites." And again (p. 155), "if we consider the amount of actual knowledge vouchsafed to us by the Excluded Middle, I hardly think we shall be much puffed up." It has been argued elsewhere (*The Meaning of Meaning*, Chapter V) that the entire logical and logistic *modus operandi* arises from a neglect of the elements of linguistic psychology, and further than that it is unnecessary to pursue the problem here.

[2] For a genetic approach to Opposition in relation to negation, privation, limitation and exclusion, see Baldwin, *Thought and Things*, Vol. I, Chapter IX, and Vol. II, pp. 216-17. The trouble about such schematic elucidations is the frequency with which the reader is overcome by the suspicion that the subject matter which they approach borders unduly on the ineffable.

of their opposites, or of the oppositional scale on which they appear, but also to *any* word whose use may give rise to controversy.

Most controversial discussion in which practical problems of definition tend to arise turns on questions of degree and contrast, as much as on differentia and hierarchy. If agreement can be reached by quantitative adjustment rather than by systematic classification, and if it is possible to remain at the level on which any particular discussion may originate, without involving more general issues, much barren dialectic may be avoided.

Serial order is easier to determine than hierarchical order. The mechanism of the Scale and the Cut is less intricate than that of Dichotomy and the Porphyrian tree, for the former are constantly employed in everyday affairs—in music, for example, and sport. Everyone who can locate middle C, everyone who has been stumped at cricket, is already in possession of the essentials. They can define bass and treble; they can explain the functions of the crease; just as they know when a door is open or when the thermometer registers zero. Yet very few philosophers could dichotomize 'Inventions' and fewer still are happy about Objects and Events; it is even disputed whether colours are similar because of the way in which they differ or because they are like one another in certain respects.[1]

If, therefore, the directional bases, the scales and intermediates of each kind of opposite, whether as extreme or by cut, for sensation or in form, were fully established both in relation to scientific requirements and to linguistic usage, not only could most legal and controversial discussion be rapidly freed from its verbal encumbrances, but the superfluous or irregular symbolic items in any given series could be readily recognized and dealt with.

When once an opposition is established and its principle understood, then either opposite, or any intermediate term, can at once be defined by opposition or by degree.

A man of genius has a right to any mode of expression.
Ezra Pound

[1] Johnson, *Logic*, Vol. I, p. 176.

2.

Historical

2.1. Aristotle's Obsession

The subject of Opposition has a long and respectable history, for Aristotle himself was obsessed by the problem of opposition which appears in different forms in all his works, though the special treatise which he devoted to it has not survived.

In the *Metaphysics* he deals with the opposition of Unity and Multiplicity, Being and Not-being. All philosophers, he says, recognize that the principles are contraries; some refer to the Odd and the Even, others to Hot and Cold, others to the Finite and the Infinite, others again to Love and Discord:—but all these can be reduced to Unity *versus* Multiplicity. Later he opposes the Anterior and the Posterior, Genus and Species, the Whole and the Part, and is troubled about the Small and the Great, the Straight and the Curved, etc. He regards everything as proceeding from contraries ("All the colours are derived from Black and White"), and it is the special property of substance to receive contraries. He thinks that production and destruction should be symmetrically opposed, even in the sense that they require equal amounts of time. In the *Physics* he again deals with the causal aspect of opposition and mentions Dense and Rare, Full and Empty, High and Low, In front and Behind. His Ethical system, too, is based on a theory of contraries, virtues being always a mean between two extremes; which causes him to discuss contraries which have and have not a mean.

Heraclitus had described his Flux and Becoming as a union of the opposites, Being and Not-being; Xenophanes had represented the amalgamation of One and All in God as the immanent unity of opposites; Parmenides had found in the reciprocal relation of a series of pairs of opposites the constitution of the world of Appearance,

and Plato made the contradiction between this world and that of the Eternal, the Unchangeable and the Perfect a basis for his entire Theory of Ideas.

Aristotle's 'metaphysical' problems in this field were set for him chiefly by Plato and Parmenides, but the historical influence of Pythagoras was also considerable. According to the Pythagoreans, there are ten fundamental oppositions in the universe:—

Limited and Unlimited
Odd and Even
Unity and Multiplicity
Right and Left
Masculine and Feminine
Quiescence and Motion
Straight and Curved
Light and Darkness
Good and Bad
Square and Rectangle

Of these the One and the Many was treated as the most fundamental, the opposition of Infinity and Finitude being also included among the ultimate mysteries of Number.

Aristotle's chief contribution to the list was the idea of Potentiality and Actuality, which were closely related to Matter and Form. He considered that we only find these opposed terms in a state of union, in complete Substance—all the characteristics on the one side of this Totality being grouped together as Prime Matter, all those on the other side as Prime Form.

In view of the naive verbal basis of all Aristotle's logical work, it is not surprising that Opposition, in which the language factor predominates, presented insuperable difficulties. His complete dependence on one language, before even grammatical distinctions had been systematized, was hardly less of a handicap than the primitive state of Greek science. His doubts, as well as his conclusions, remained as he formulated them till the last great representative of pre-scientific speculation once more made Opposition the keystone of a metaphysic; and in the Hegelian system we have the supreme example of what the intellect can achieve unaided by linguistic psychology and undisturbed by orthological qualms.

2.2. The Metaphysical Approach

But throughout the intervening period, Opposition continued to play a leading part in logical and theological speculation. Thus the Neo-Platonists laid particular stress on Unity and Multiplicity; and in the hymns of Synesius we have a variety of symbolic forms of opposition, which in the Christian Era crystallized into God and Devil, Good and Evil, Heaven and Hell. All through the Middle Ages, Universal and Particular continued to hold the field; and Aquinas, by his doctrine of Material forms and Subsistent forms, elevated Opposition into a primary dogmatic principle.

With Nicholas of Cusa, Opposition becomes at once a theological and an epistemological ultimate. In a sense it is one with God himself, for the prime form he calls God, and in this prime form the opposites unite into an immediate and absolute unity. The prime form which they constitute unfolds itself by virtue of the severance of the unity into opposites, the prime form and its *explication*, or Plenitude, being the two poles from which the survey is made.[1]

Similarly, Jakob Boehme held that Opposition was the fundamental creative force. The essence of all essences (God), though one, is severed at birth into two principles. All revelation is through conflict. "In yea and nay all things consist."

But perhaps the most curious fact in the whole historical career of oppositional theory is the neglect by his expositors of its place in the writings of Kant. Kant's attitude to opposites is the key to the understanding of the *Critique of Pure Reason*, and his recognition of an unsolved problem is manifest in all his writings. Inner—Outer, Unity—Multiplicity, and Activity—Passivity are fundamental features of his system. Kant usually contrasts Spontaneity and Receptivity, while Understanding and Sense appear as two poles of a "real opposition," in which each of the two terms is the condition of the other, while at the same time they are merged in one unity.

Ludwig Fischer, who has most clearly shown the significance of this distinction between 'real' and 'logical' opposition for Kantian interpretation[2], has also

[1] Cf. L. Fischer, *The Structure of Thought*, p. 204.
[2] *Op. cit.*, *The Structure of Thought*, p. 252.

emphasized the fact that the final emanation of the Inner—Outer opposition, which takes the form of Ego in itself—Thing in itself, is regarded as coalescing in a unity so complete that Kant speaks of an "identical combination." The universal concepts which are referred to the outer, counter-pole, the *focus imaginarius*, are called Ideas; "they are thus liminal ideas which can at best be realized asymptotically."[1]

Light is thrown on this oppositional emphasis by a treatise dated 1763, nearly twenty years before the publication of the *Critique*. It is called "An Attempt to Introduce the Idea of Negative Magnitudes into Philosophy," the main subject of which is Opposition. The distinction between 'real' and 'logical' opposition is carefully formulated (in the latter the two members are mutually exclusive in every respect, so that they cannot be valid simultaneously), and examples of the former are considered in relation to magnets and electricity.

Kant held that the law of polar opposition may be assumed to apply similarly to heat, and that something very profound might one day emerge from such possibilities. "It would seem that the positive and negative activities of different kinds of matter, more particularly of electricity, hide much important knowledge, and that a happier posterity, whose good fortune we can already foresee, may succeed in deriving general laws from thence." From the summit of this oppositional Pisgah, he calls on others to help him in expanding these small beginnings.

It is particularly interesting to find Kant looking to mathematics to provide him with a more exact notation for his opposed terms. He distinguishes them by the plus and minus signs, so that, if they are equal, their arithmetical result is equal to zero, though in actuality the result of their joint action is always a certain definite effect. The proposition then emerges that all the 'real grounds' within the universe yield a result equivalent to zero. *Becoming* is treated as the result of combining *arising* with *perishing* ('negative arising,' symbolized by the minus sign).

Fichte, who claimed that he was the first thinker to understand Kant, did not deal further with the problem of Opposition, though his three axiomatic principles assume that identical determination is the source of an immanent severance into opposites and of a reciprocal dependence. For Schelling, on the other hand, it is the opposition of 'nature' and 'spirit' which is axiomatic. He later dwelt on the poles of the prime opposition (Thought—Being, Ideal—Real, Subjective—Objective), and introduced the notion of the *indifference* of these objects, the 'total indifference' of Subjective and Objective being 'absolute reason.' Everything that is actual then

[1] *Ibid.*, p. 275.

becomes a mixture in which opposites are compounded in different degrees. Finally, Indifference is regarded as standing apart by itself and having no connection with any opposition: "every opposition is shattered in it." It is severed into two prior terms which are equally eternal—and by virtue of this severance the whole manifold of life and consciousness and the existence of individuals come about.[1]

It was, however, with Hegel that Opposition first explicitly dominated an entire system of philosophy. His initial step is the identification of prime Being and its opposite, Nothing; and their unification, in Becoming, launches the Dialectic method, which is thereafter controlled by the principle of the unity of Thesis and Antithesis in Synthesis. A purely symbolic series of definitions is thus gradually developed into a descriptive evolutionary doctrine of a 'movement' of the Absolute from a relationless unity to a reality which embraces the whole of nature. The process does not make its beginning in the One, but at one of the two sides, which by 'immanent transcendence,' out of a given and finite substance into its opposite, cancels itself and, together with its opposite, is summed up in a higher and more comprehensive concept.[2]

With this major effort we reach a point at which an historical study of Opposition in 19th Century Philosophy is indicated. It would, however, throw light rather on the philosophers of that century than on the problem of Opposition. There are the fundamental pairs of Schopenhauer (Will and Idea) and of Hartmann (Unconscious and Conscious) in their speculative settings; the Herbartian attitude to opposites, correlates, and contradiction; the guiding oppositional forms of Rehmke, and the "opposition, conflict and tension" which characterize the supreme category of Höffding. Spencerians would rightly add the name of Spencer.[3]

For our purposes, only one such approach is sufficiently systematic to justify any detailed analysis, that, namely, of Ludwig Fischer, to whose historical chapters reference has already been made. Opposition, indeed, is here treated as the Prime Form of all experience—the cleavage of the unity into opposites, or conversely the

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[1] Cf. Fischer, *op. cit.*, p.307.

[2] *Ibid.*, p. 293. It would take us too far afield to examine the stages by which the oppositional dialectic of the Hegelians passed, through the economic materialism of Marx, into the ideology of Vladimir Ilyitch Ulianov (Lenin)—to become part of the official Credo of the U.S.S.R.

[3] The writings of Schopenhauer frequently found a place beside those of Herbert Spencer in cultured English homes during the last quarter of the 19th Century. "The idea of evolution as the equal and parallel progression of opposites," says a typical speculative essayist, "was suggested to me by the simultaneous study of Herbert Spencer and Schopenhauer… At first my generalization only took in the contrasted pair of pleasure and pain; very soon it was extended to good and evil; and finally it came to embrace adaptation and misadaptation generally, or, in other words, the whole of the phenomena of life when regarded under the aspect of evolution" (W. Benett, *The Ethical Aspects of Evolution*, Oxford, 1908, p. 5).

unity of opposites. We cannot conceive the separate co-existence which is the common characteristic of all three stages of order (in Space, Time and Knowledge) without the ideas of limit and severance. In Geometry, a limit has a meaning only by virtue of its two opposite sides; to determine one position is to determine two reciprocally determinant positions; a spatial element or differential is the representation in terms of analytic geometry of that process of positing limits in space which means a cleavage into opposites. In Time, this opposition is manifested not at various different points in the same manner, but at one point only; the present is the one point of time which is actually real and is the most striking limit between hither and beyond (past and future).

In Knowledge, we experience immediately and permanently the inter-play of opposites; as Thought and its Object, Ego and non-Ego—a single fact such as *green* being divided into two opposite terms, inner-outer, subject-object.

Thus the prime form of relation is "simply an opposition, the members of which are each the conditions of the other and at the same time are resolved into a single datum"—the point, or limit, from which the two opposites radiate. This limit, the present moment or sensation, is the ultimate term, and the primary oppositions are therefore Subject and Object, Being and Not-Being (Past and Future), Inner and Outer (Concave and Convex), Action and Reaction, Unity and Multiplicity.

In the three manifestations, or dimensions, of the opposition, or prime relation (which, with its limit, constitutes the Prime Form of ultimate analysis) the twofold direction leading from the limit to the hither and the far side (whereby the determinateness of the ultimate term establishes a plus and a minus—effecting the severance of the opposition) reflects the fact that space may be described as static, time as flowing, and knowledge as oscillating. In Space there may be many limits, and no direction is eminent; in Time there is one direction and one limit only; in Knowledge, not the limit itself but the projection into the two opposite directions is emphasized, and by such one-sided emphases we get the concepts of essence, substance, and individual.

A suggestion whereby the relation of the differential to the problem of Continuity might also throw light on the mathematical aspects both of Opposition and of Projection is not further developed. The differential, by "radiating alike past and future," allows us "to see in *oscillation* (tension) and *extension* the germ of the concept of continuity," with its historical burden of antinomies and paradoxes from Zeno to Kant and the logisticians.

2.3. The Evolutionary Approach

The first sociological treatment of Opposition was a direct outcome of the modern Evolutionary controversy. To the schematic oppositions of logic and cosmology and the polarities of electricity and chemistry the evolutionists added the Struggle for Existence in the biological field.

The sociologist was confronted by a doctrine of strife as the key to all change and the condition of all progress; which made it necessary to re-examine the whole theory of Opposites in a spirit very different from that of Aristotle or Hegel; and this was the task which Tarde set himself in his treatise on *L'Opposition Universelle*.

Our first impression of the universe, after noting its repetitions and monotonies, is that of opposition in everything. Antipodes, concave and convex, equilibrium of forces neutralizing one another, equal and opposite reaction, physical polarity, wave interference, the inverse motion of the heavenly bodies and of molecules and electricities; symmetries in crystals and living forms, radial and bilateral symmetry; the struggle for existence; the antithesis of pleasure and pain, of yes and no, of love and hate, of hope and fear; the social antinomies of beliefs and wills, of armies and parties, and the balance of power:—all these and many more have contributed to the importance of a problem which has vexed mankind from the earliest conceptions of Ormuzd and Ahiram, God and Devil, to the era of Darwinian theory.

In Tarde's opinion, armed encounters first aroused the idea of opposition, and even the infant faces his infant foe in single combat. Pleasure and Pain, from which our psychological oppositions chiefly derive, are hardly less obviously opposed than Greek and Trojan, Roman and Carthaginian, though the connection is by no means equally clear.

Philosophy is as vague on the matter as current conversation. Sometimes the opposition is between two terms, together forming a totality apparent or real, one of which completes, equilibrates, or determines the other: I and the Not-I, Full and Empty, Light and Darkness, Movement and Rest, the two halves of a circle, Body and

Mind, Acid and Base, Horse and Rider; sometimes it is the poles of a magnet, sometimes the ends of a finite series such as a diameter or a stick,[1] Head and Feet, Black and White.

How can we distinguish the false from the true? If we take the first group, I am opposed to the Universe, just as is any atom or individual. (Love can couple an individual not only with the Universe but with his Beloved:—this is a case of adaptation, both being adapted to Love.) All logical dichotomies are false oppositions; there is no confrontation in the contrast. We must, however, admit opposition by neutralization and equilibration: Acid and Base,[2] Red and Green, Poison and its Antidote, two unequal weights which balance one another on an unequally balanced scale—these are true opposites.

Are we to explain mechanical opposition in terms of static, or vice versa? It is easy to see that the inversion of similar shapes is due to the possibility of their advancing against one another, while pleasure and pain are only opposed as movements of desire and repulsion. A sensation is agreeable because it is desired:—pleasure is a static representation of the dynamic fact of desire. It is in its appetitive and not its sensational aspect that pleasure has an opposite. In the case of mathematical signs, also, the operations concerned are really directional.

In a word, the sole source of all opposition is the possibility of a reciprocal neutralization of like actions. Oppositions apparently static are based on tendencies. We should regard as opposites two actions which could destroy one another even if they were not alike—but this is impossible. In order to balance one another two terms must be equivalent, must have a common measure, which implies their similarity and equality from the point of view in question. It follows that where there is no neutral point between the two extremes of a series there is no opposition, only heterogeneity. Difference, however great, does not create opposition. The spectator may pass mentally from one term to another, with two opposed actions separated by a state of inaction: this may give a true opposition, but only a subjective one.

The passage from Concave to Convex has a zero point; the passage from Pleasure and Pain is by way of a neutral state; between the positive and negative quantities of algebra there is a zero, and this series gives us the most perfect of all symbols of opposition. Nothing, neutrality, and zero signify stability, and the opposite

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[1] In this sense, says Tarde, Centre is opposed to Circumference.

[2] In the early 19th Century, says Paul Walden (*Salts, Acids and Bases*, 1929, p. 55) "the old conception of oppositeness or polarity, advanced in early days by Glauber and Tachenius, again reappears"—in the definition of acids and bases given by Avogadro, Oersted, and Gay-Lussac.

is thus a conservative rather than a destructive factor, though never creative. The normal is the zero of monstrosity.

White is desired and black is disliked—hence their opposition.

It follows that the time factor is essential to all opposition. But Time as such is static; it has only one dimension; it cannot have direction. If instants are represented by a linear series, this is only a metaphor.

When Edison invented the phonograph he realized that he had put a new instrument of invention at the disposal of humanity.[1] For musical reversal is really a variation, and not a mere inversion; all the musical relations are changed, whereas when we see a profile from the other side we only see the same face. Hearing music backwards is similar in this respect to inverting a page of calligraphy or of type, so that we seem to see a new script with a different, not a diminished, beauty.

In general, every country has the language it deserves.

Jorge Luis Borges

[1] Unfortunately, however, until the year 1927 gramophonic reproduction was so crude as to render serious experimentation, on the lines suggested by Tarde, a matter of great difficulty. The first machines for phonetic and psychological analysis were constructed at the Orthological Institute in 1928; and it was then possible to determine the characteristics of each separate type of musical instrument in reverse.

2.3.1. The Sociological Approach

The outlook of Tarde is primarily social, and his sociology is concerned with three primary processes, Repetition, Opposition, and Adaptation. In his *Psychologie économique*[1] he summarizes the main points in his threefold system with special reference to his theory of Opposition.

The *repetition* amongst variations, the cycles and uniformities, which interest science, are a reproduction of something that at the same time preserves the original. But destruction must be studied as well as reproduction, and this includes the equilibrium of forces, the symmetry of forms, and the strife among all creatures: in a word, *opposition*. Finally there is *adaptation*, the resultant harmony.

If sociology is to be a science it must analyze its own domain of oppositions, and substitute the true and the exact for the false and the vague. These oppositions—strifes and collisions of temporary utility—are destined to fade away.

Repetition appears in undulation or periodic movement (physical), in heredity and habit (biological), and in imitation (social). Opposition appears in war, competition, and discussion. *Adaptation* is the harmonization of some individual invention with what is established, in an encyclopaedia, a grammar, or a creed.

Everything in the world of facts proceeds from the comparatively infinitesimal, to the comparatively infinite, whereas in science, in the world of ideas, which reflects it as though reversed in a mirror, everything proceeds from the great to the small.

The 'law of opposition' thus consists, according to Tarde, in a tendency to enlarge in an ever widening sphere, from a cell in the brain of an individual (where a contradiction between two beliefs or desires is produced by an interference between imitative rays from without) to the major conflicts of groups and societies.

The progress of science implies the replacing of superficial gross oppositions by countless profounder and subtler ones. Day and Night, Zenith and Nadir, North and South, Winter and Summer, Celestial and Terrestrial, Sun and Moon, have been refined by the discovery of the elliptic, parabolic, or hyperbolic character of stars and planets and of the symmetry of the two halves of the orbit on either side of the major

[1] English translation, *The Social Laws*, 1899, Chapter II.

axis; as well as by the law of action and reaction. Various asymmetries are recognized, and oppositions such as the *antichthon* of the ancients have vanished. Life and death, youth and old age, were amongst the first pairs to emerge; but embryology has disposed of the view that senility, the dissolution of the individual, is the reverse of evolution. So too, Nutritive and Poisonous, Useful and Harmful have no longer an objective validity. Demons and angels have disappeared, together with a variety of mythological belligerents and racial antitheses.

Opposition is not to be defined as the maximum degree of difference, but as a very special kind of repetition, namely of two similar things that are mutually destructive in virtue of their very similarity. They are always a couple or duality, opposed as tendencies or forces, not as beings or groups of beings nor yet as states. If we regard Concave and Convex, Pleasure and Pain, Heat and Cold, as opposites, it is by reason of the real or assumed contrariety of the forces which produce those states.

There can therefore be no essential, innate, absolute, or natural opposition between nations, races, or forms of government; for every real opposition implies a relation between two forces, tendencies, or directions.

There are two evolutionary oppositions of heterogeneous series (evolution and counter-evolution) and oppositions of degree (increase and diminution in homogeneous series).

There are oppositions of sign, or diametrical oppositions. We must not be confused by the language of mathematics, in which plus and minus symbolize increase and diminution as well as positive and negative directions. The increase followed by a diminution of an *affirmative* belief is quite different from affirmation followed by *rejection*. Belief and desire possess opposite signs, and in this respect they admit of comparison with mechanical forces which act in opposite directions along a straight line.

The fact is that space admits of an infinity of couples whose members are opposed to each other in direction, and that an infinity of affirmations (as opposed to negations) and desires (as opposed to repugnances) can each have the same object, makes war, discord, and all the tragic side of life possible.

All oppositions whether of series, degrees, or signs, may take place between terms that find expression in one and the same being or in two different beings; and we must also note that the terms may be either simultaneous or successive. In the former case there is strife, and the equilibrium accompanied by destruction and loss of energy; in the latter, alternation and rhythm. When an opposition occurs in two different beings, whether of series, degrees, or signs, it may be either simultaneous or

successive—either strife or rhythm. Otherwise it can be both simultaneous and successive only if it is an opposition of signs. For instance, it is impossible for the velocity of a body moving in a given direction to increase and diminish at the same time; it can only do so successively. But equilibrium (when a body is impelled by two distinct forces to move in two opposite directions) is often characterized, as in crystals, by a symmetry of opposite forms. We may (thinks Tarde) love and hate the same person at the same time, though our love can only increase and diminish alternately.

It is internal oppositions (in the same being) which make external oppositions (between different beings) possible. But internal oppositions, though hesitation may be of purely psychological origin (due to contradictory sense-impressions), are usually of social origin (the interference of two different rays of imitation).

Language is the house of the truth of Being.

Martin Heidegger

2.3.2. Tarde's Classification

In his more detailed treatment of opposition[1] Tarde attempts a systematic classification.

Extremes are states or actions; they are symmetrical opposites which are based on dynamic opposition. They must, however, be treated independently. It is always possible, moreover, that there may be oppositions of a still more fundamental nature which would explain the analogy between the many forms of static and dynamic opposition of which we are aware.

Dynamic opposition is either of the simultaneous or the successive. In the latter type we are concerned with *rhythms*; but it is with simultaneous opposition that language is primarily concerned.

Simultaneous opposition is either radial or linear. Radial opposition is either centripetal or centrifugal, while linear opposition is *polarity*. The two poles are the extremities of a vibration. A ray is said to be polarized when the vibration is in one plane only, because it can be used to test the polarity, i.e., the right- or left-handed type, of two enantiomorphic crystals. The aphelion and the perihelion of a planet may be regarded as the two extremes of its ellipse, its two poles.

Species may oscillate between two poles, as do polypetalous and monopetalous plants; just as the structure of the human brain oscillates between the two degrees of length symbolized by dolicocephaly and brachycephaly. Certain societies or activities are now to some extent 'depolarized,' they are no longer driven to bloodshed by oppositions; though in politics polarization is still the rule.

As distinguished from the formal classification of opposites, their matter must also be classified.

They are either *qualitative* (serial) or *quantitative*. Quantitative opposition again is either in *degree* or *dynamic*; a dynamic opposition is either *mechanical* or *logical* (psychological). Qualitative opposition is theoretically applicable to everything,

[1] *L'Opposition universelle*, Chapter II.

degree only to quantity, mechanical only to motive force, and logical only to psychological phenomena.

Series are reversible and irreversible. We cannot reverse, and we do not in practice find in inverse form, many of the processes of nature. In other cases the same *order* can appear in two series, the one the inverse of the other.

Quantitative opposition, plus and minus, augmentation and diminution, implies a continuous increase or decrease throughout the scale of development. It is based on the perception of acquisition and loss—in relation to some need. A need presupposes a lack, the search for a complement or the realization of a type or ideal, whether conscious or not.

Mechanical and logical oppositions are both derived from the opposition of positive and negative, of *direction*. The opposition of concave and convex, of affirmation and denial, of love and hate, implies a zero, with a reversal of direction on the other side.[1]

We must note that many properties which can increase and decrease on the positive side are not quantifiable on the negative. We cannot be more dead than dead. Abstract and generic terms, which each have an infinity of dynamic oppositions, are opposed by their negations but have no negative qualities which are their own images reversed.

There is no anti-volume, opposed to volume and beyond one-volume, no anti-mobility beyond rest, no anti-light beyond darkness, no anti-sonority beyond silence. Volume or extension is a general quality of figures which are symmetrically opponible; sound is the general name for sound rays which proceed in opposite directions like rays of light, and sound vibrations which, like them, are subject to rhythms and interferences. So, too, in the subjective field, there is no anti-consciousness, no anti-sensibility, no anti-intelligence, no anti-activity.

The positive and negative oppositions in all these cases are related to that of making and unmaking, less general than acquiring and losing, and still less general than appearing and disappearing. But the opposition of making and unmaking covers not only that of positive and negative but also the quantitative and the serial. Yet the

[1] Tarde's difficulty about the plus and minus of Algebra (p. 53) appears to be removed by the consideration that the problem only arises when there is a difference in space or time in the addition or subtraction. But this must be dealt with in science by a specification of the space or time element, as in a force-couple acting at different points of a body, or a harmonic motion due to forces varying in intensity and direction at different times. The object of the + and – convention is to obtain a mean result by the application of an appropriate formula.

cause must not be confounded with the effect:—force, quantity, and order are irreducible from the standpoint of opposition.

Dynamic opposition, Tarde concludes, implies not only the existence of forces, but a constitution of the field in which they act such that a combat between them is impossible. All other opposition is therefore bogus opposition, and should be dealt with in terms of Difference and Contrast.

I remain convinced that
obstinate addiction to ordinary language in our private thoughts
is one of the main obstacles to progress in philosophy.

Bertrand Russell

2.3.3. The Zero Criterion

Scientists tend to agree with Renouviers' view that the only true opposites are those which exhaust a field by negation. Such vague contraries as black and white 'have no interest for science.' Nothing can be done with Large and Small, Strong and Weak, and the like. Tarde strongly deprecates this cavalier treatment, and by his insistence on the criterion of neutralizing forces and the necessity for a zero state he thinks he has provided a scientific foundation for a systematic treatment of the whole subject. Hence the confidence with which he differentiates what he regards as true oppositions from mere 'contrast,'[1] throughout the entire range of the sciences.

Thus among the sensations of touch he allows that *pressure* and *traction* (as by sucking) are opposed, with simple contact as a zero state. In the case of warm and cold sensations, with a zero constituted by normal body temperature, there is no true opposition; the two sensations as such are not the reverse of one another, and when higher intensities of either are reached both change into sensations of burning.

Black and White, again, are not true opposites, for the intermediate shade of grey which is conventionally treated as a point of departure for scales of black and

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[1] The desirability of treating Contrast in conjunction with opposition is questionable, but many symbolic devices are available for this purpose. The following is due to Mr. A. Wechsler, who would distinguish four main constituents in Opposition, symbolized by *ob*: (1) Simple location, (2) Symmetry, (3) Direction, (4) Difference tending towards Contrast as limit. He thus gets *Lob*, *Sob*, *Dob* and *Cob*, which, according to him, are exemplified, respectively, by Inside and outside, Right ear and left ear, Love and hate, Order and chaos.

"This notation," writes Mr. Wechsler, "can be varied for increased precision in two ways. Quantitatively by using capital letters for the fullest force of the concept and qualitatively by combining the various symbols. I append a few examples which can be amplified at will: —

Light and darkness = *Cobs*.

Light and shade = *cobs.*

Black and white = *Cobs* (or, if thought of with reference to neutral grey = *s Cobs*) which gives Red and green as *s cobs*.

Up and down would be *Dobs* but vertical and inclined would be *dobs*.

Normal and abnormal would be *cobs* but Normality and monstrosity *Cobs*.

Generally it will be found that a combination of symbols leads to greater precision than the simpler form. Thus *C Dob* high = deep, but *C s Dob* high = equal depth below ground."

white is an arbitrary matter, and in any case it is not interposed between the two extremes, but is composed of them.

In the biological sphere the opposition of vegetable and animal with regard to respiration was dissipated by Claude Bernard, but new antitheses have taken the place of the old illusory pairs. The sexual antithesis of male and female has been treated by Geddes and Thomson as corresponding to that between catabolism and anabolism. But three oppositions are here implied, (1) Nutrition and Reproduction, (2) Nutrition and Denutrition, (3) the act of Generation regarded as a coition of opposites.

But the opposition of the male and female roles, though the parallel is accepted by Fouillée as a basis for his classification of characters, is, as he says, very doubtful. Movement, for example, is not the opposite of rest, for rest is the zero between one movement and another in the inverse direction; nor are the functions and shape of the spermatozoon the opposite of those of the ovum.

Schopenhauer's theory of love as the attraction of opposites, no less than Hanemann's theory of homoeopathy, can be dismissed as equally superficial. So too the antinomies of Kant, the triads of Hegel, and Hartmann's antithesis of Will and Idea. Of all these generalities Mr. Spencer's evolutionary principles are the most suggestive, and the oppositions of Victor Hugo the most absurd.

Tarde quotes Boutroux and Duhem to the effect that no concrete physical phenomena can be repeated inversely owing to friction, the resistance of the environment. According to Berthelot physical change may be reversible, but chemical change is not. The dissolution of the solar system could not be a mere reversal of its evolution, any more than geological periods could be reversed. Nor can we imagine a reversal of cultural progress.

This fact of irreversibility is related to the ascendency of life and growth over dissolution and decline in all our estimates: and also to the choice of the term which expresses an augmentation to characterize every antithetical couple in the language—Speed not slowness, Force not feebleness, take the privileged position. Evil is often regarded as the least good, but Good is seldom the least evil or Beauty the minimum of ugliness.

Tarde devotes considerable space to psychological opposition in relation to a highly controversial analysis of mental processes, the most interesting part of which is an account of appetition not very different from that which might be involved in a restatement of Bentham's theory of pleasure. At one point he makes the curious suggestion that every zero or neutral term can be made the opposite of an extreme, with a positive intermediate. He does not, however, develop the suggestion very far,

and a careful examination of his intermediates shows that there are good reasons against generalizing from the hopeful triads.

The dream has a very striking way of dealing with the category of *opposites* and *contradictions*. This is simply disregarded. To the dream 'No' does not seem to exist. In particular, it prefers to draw opposites together into a unity or to represent them as one. Indeed, it also takes the liberty of representing some random element by its wished-for opposite, so that at first one cannot tell which of the possible poles is meant positively or negatively in the dream-thoughts.

Sigmund Freud, *The Interpretation of Dreams*

2.3.4. A Fresh Start

It is significant that Tarde's excursion into this uncharted region attracted little attention either in England or on the continent, in spite of its author's world-wide reputation. It would, indeed, be instructive to follow the comment to which it gave rise, with a view to discovering any seeds fruitfully planted. This neglect is due in part to Tarde's failure to render his conclusions applicable to anything beyond sociological speculation, and in part to his somewhat superficial treatment of the Cut and Scale; but more particularly to the remoteness of the whole discussion from the linguistic problems which provide it with a practical orientation.

The way is therefore open for a fresh start, and in the following pages an attempt has been made to cover the entire verbal field with which Definition and Substitution are alike concerned.

**I have the handicap of being born
with a special language
to which I alone have the key.**

Gustave Flaubert

3.

Analytical

The linguistic aspect of the general problem of Opposition has been curiously neglected by those whom it should most concern. Panoptic definition[1] forces us to view it in a new light and demands a solution before we can proceed.

What sort of words can be said to have opposites in the ordinary sense of the term, and why? Let us take a few common pairs at random, as they are found in works on lexicology, psychology, and logic:—

1. Black and White.
2. Hot and Cold.
3. Open and Shut.
4. Ruler and Ruled.
5. Hard and Soft.
6. Right and Left.
7. Man and Brute.
8. Up and Down.
9. Acid and Alkali.
10. Pleasure and Pain.
11. Visible and Invisible.
12. Town and Country.
13. Learned and Ignorant.
14. Possible and Impossible.
15. Kind and Unkind.
16. Good and Bad.
17. Work and Play.
18. Ill and Well.
19. Easy and Difficult.
20. Before and After.
21. Male and Female.
22. Love and Hate.
23. British and Alien.
24. Red and Green.
25. Normal and Abnormal.

If this list is presented to a dozen persons of intelligence and experience, but with no special training in psychology or traditional logic, it is probable that all these pairs will be passed as 'opposites' by one or another of the group, while 20 of the 25 are likely to secure a majority vote. Special training, however, will produce varying

[1] See *The Panoptic Method.*

degrees of hesitation; rejection being based on a number of more or less arbitrary principles.

Of the four pairs at once giving rise to discussion, three—Man and Brute, Town and Country, Male and Female—raise questions of a verbal nature (involving the theory of Definition), while Red and Green, which to some are the most fundamental opposites in the whole list, are by others the most summarily rejected.

At all points the nature of Negation proves hardly less puzzling to the practical mind that the vagaries of linguistic usage. Why is 'not-white' so unsatisfactory to deal with, while 'not-visible' or 'invisible' readily recommends itself as the opposite of 'visible'?

The writings of logicians are intriguing rather than helpful. Stress is laid upon the distinction between Positive and Negative terms as a particular case of Incompatibility. Contradictories are the only incompatibles which interest logic, and they are contradictory either because the matter itself tells us that they are so, or for the purely formal reason that *not* has been prefixed to a given term in order to secure mutual and exhaustive exclusiveness.[1]

When two terms "express the greatest degree of difference possible," in the same universe, they are called Contraries. A Privative term is one which implies the absence of an attribute in a subject which might be expected to possess it, or which is capable of possessing it.

And in addition to Contradictories and Contraries, Logic mentions 'Repugnant' terms, no two of which can be predicated of the same thing at the same time. But since Contrariety and Repugnance are merely 'material,' Positive and Negative terms, distinguished by the word *not*, are the only incompatibles worthy of recognition; and with these alone does it feel called upon to deal in the elaborate treatment of Propositions and Deduction to which these distinctions are designed to lead.

The interests of the linguist, the lexicographer, and the student of Basic English are thus sidetracked, and we are left to cope with Opposites as best we may.

Logic is not usually critical of its symbolic foundations, but the neglect of this particular problem in current textbooks is accompanied by insistence on the misleading character of many apparently negative terms. *Shameless*, it is pointed out, is almost synonymous with *shameful*; *Nonconformist* is as positive in its meaning as

[1] Whether exhaustive of the universe as a whole or of some particular universe of discourse has been the subject of much controversy.

Orthodox; and only in a few cases, where no intermediate idea is possible, such as *equal* and *unequal*, do negative prefixes correspond with true material contradiction.

We are left, then, with a general impression of vagueness, and a wholesome mistrust of linguistic guidance. Can anything more be said about the five-and-twenty candidates whose examination was invited above?

In the first place, on the purely verbal level it is curious that some words seem to have such obvious and universal opposites, while others seem to resist all attempts to contrast them in this way with incompatible partners. Again, a metal cannot be both gold and silver, though cross-breeds and alloys are admitted on an extensive scale; and with equal certainty the repugnance of red and blue is patent to every observer. But these are not opposites. What, then, of Black and White, Red and Green?

The visual field provides many of the most characteristic oppositions, and among the chromatic and achromatic pairs three series must be very carefully distinguished. The Black-Grey-White series is a true 'scale,' rising continuously both in its psychological and its physical form from a minimum to a maximum. A surface which reflects no white light is in this sense the opposite of one which reflects 100 per cent. The Red-Grey-Green series, on the other hand, appears as two scales end to end; the one descending in redness, through all degrees of red-grey, to grey, and thereafter rising in greenness, through all degrees of grey-green to green. There is no single rising scale, as in the case of black to white. The series Red-Orange-Yellow-Green, our third type though similar to the Red-Grey-Green rather than the Black-Grey-White, is clearly analogous to the Blue-Green-Yellow range (except for the fact that its extremes are true opposites).

Owing to the peculiar characteristics of the pigment compounds on which it depends (and the peculiar nature of the spectrum in which the same sequence appears), this third series has no precise parallel in the world of opposites, apart from the vagaries of other compound chemical substances.

Red-Grey-Green, on the other hand, is closely analogous to such a chemical series as is formed by Acid and Alkali. We have a scale of acids as far as the entirely neutral dividing line (salt) and a similar scale of alkalis on the other side. But there is no temptation to think of the whole scale as the scale of salts in the same way that the grey scale might be regarded as terminating in the two opposites, Black and White.

3.1. The Scale and the Cut

The study of a large number of such pairs suggests as a preliminary hypothesis that we are confronted by a very fundamental distinction in any theory of opposites—that, namely, between the Scale and the Cut. Opposites, it will be maintained in the sequel, may be either the two extremes of a scale or the two sides of a cut; the cut marking the point of neutrality, the absence of either of two opposed characters in the field of opposition. By a cut, moreover, we can dichotomize either a 'linear projection' or a 'field of referents.'

Spatial opposites generated by a cut are thus different in many respects from series opposites. If we decide that Inside and Outside are opposites generated by a cut, there is no question of a series, and the one side is finite while the other is infinite; for though we can speak of 'further inside' or distinguish degrees of exteriority, thus making a quantitative gradation on either side of the dividing line, this is a secondary consideration, and it is significant that the opposition begins, as it were, *immediately* the line is crossed. Similarly, things may be 'neither before nor after,' but they are very definitely and completely 'before' if they are before at all—though in one form of the temporal metaphor we can equate 'further before' with the remoter past, while in another we speak of the near future as what is more immediately before us.

It is therefore very important to be sure whence the metaphors of ordinary language are derived, whether we desire to attain to clear distinctions in argument, or adequately to cover the field with our linguistic material. Geometrical and spatial metaphors are particularly worthy of study, since the opposite sides of a rectangle give us what amounts to a peculiar kind of opposition, such as we find also in the opposite sides of a street (which may be said to face one another) and the opposite sides of a building (which, Janus-wise, face in opposite directions); while the 'opposite' banks of a river, though analogous to 'parallel' (in that they do not themselves usually 'face' one another) would equally involve us in an elaborate discussion of points and perpendiculars if it were not that for practical purposes we can regard our Cut itself as varying in breadth.

In most of the spatial metaphors, however, a third and even more fundamental feature of opposition can be detected, namely, Direction.

3.2. The Directional Basis

The opposite sides of a cut and the opposite ends of a scale will go a long way towards covering the cases of opposition with which lexicology is confronted, but neither feature, as such, will help us with 'opposite directions.' Our description of two trains passing one another, or of 'up and down,' 'backwards and forwards,' 'into and out of,' introduces the new feature, *reversibility*. But can we group these directional opposites, and that kind of opposition which we speak of as 'the same shape reversed,' under a single head? Mirror-images, enantiomorphs, and all forms of geometrical reversal may be regarded as directional opposites in rotation. There are, however, no degrees between these opposites, as there are between the extremes of a scale, nor does there seem to be any very obvious relation to the principle of the cut. But without entering into the technicalities of vector analysis, we may now be in possession of all the necessary first approximations.

As a preliminary to any attempt to discover a common principle, it may be noted that all motion at the heuristic level is either translational (rectilinear) or rotational.[1]

We can regard a *scale* as a diagram of rectilinear motion in one direction or its opposite, increasing or decreasing throughout the whole gamut, according as we start from the bottom and move up or from the top and move down.

Psychological oppositions, which are felt and described as pulling in opposite directions, can be diagrammatized as rectilinear motion in opposite directions starting from the neutral point—the cut; in such a diagram we have not one scale but two scales end to end in one *series*, with two extremes as well as two sides to the cut.

Thirdly, in the case of opposite directions, such as the two trains whose directions the observer at once describes as opposite, the opposition is also diagrammatized in terms of rectilinear motion. The observer places himself emphatically at a point from which the two motions diverge, at the cut; so if he desires to follow the one, he has to move in one direction, and vice versa. At the same time,

[1] Motion in a circle, any curvilinear motion, can, of course, always be resolved into three rectilinear motions differing in direction (two, if the curvilinear motion is in a plane).

however, he may rotate a part of his body from right to left, so that a rotational factor also enters into the definition.

The only *special* outcome of rotational movement would then be found in the enantiomorph, the asymmetric figure and its mirror image. With enantiomorphs in two dimensions, one figure can be turned into the other by rotation through the third dimension, each point in the figure describing a semicircular path. The enantiomorph in three dimensions is turned into its mirror-image hypothetically by rotating it in the fourth dimension through a hemisphere, each line of the three-dimensional figure describing a hemispherical path in the fourth dimension. Without this sense of rotation it is doubtful whether the naïve judgment would arrive at an opposition.

Rotation through a fourth dimension cannot be carried out; but if we have two enantiomorphs such as a pair of gloves, which are not completely closed figure and are very thin, one can be turned into the other by turning it inside out—but this again is a form of rotational movement.

> To have another language is to possess another soul.
> Emperor Charlemagne

3.3. Attraction and Repulsion

In attraction and repulsion we are again concerned essentially with directional opposition. Any two entities such as electric charges or magnetic poles are said to *attract* one another when a force acts on each of them in the direction of the line joining the two, tending to bring them together; and they are said to *repel* one another when it tends to separate them.

A 'pole' is a centre of force, used of entities of which two kinds with opposite properties are known (positive–negative, north–south).

When these polarities are mixed in equal proportions, they neutralize one another. The force they exert is equal (in terms of number of constituent units or velocity imparted to a unit mass in a given time) and opposite (in terms of direction of movement of the body affected).

From its use both for the extremities of the Earth's axis, or any rotating spherical of spheroidal body, and for the two opposite points or regions on the surface of a magnet at which the magnetic forces are manifested, the word *pole* came to be used generally for opposite principles of any sort.

"There is, strictly speaking, no proper opposition but between the two polar forces of one and the same power," wrote Coleridge in 1810, and again (1818), he speaks of a law in all electrical phenomena, "which reigns through all Nature, viz., the law of polarity, or the manifestation of one power by opposite forces."

In his *Philosophy of the Inductive Sciences* (1840), Whewell referred to "the general notion of polarity—opposite properties in opposite directions," thus popularizing the idea with philosophers and logicians; and at the same time Emerson could write: "Polarity, or action and reaction, we meet in every part of nature." Thirty years later Emerson had got so far as to speak of the polarities meeting when "the instinct of freedom and fossil conservatism" were in opposition.

The word *polarity* thus passed into general literature for the possession of contrasted aspects, or indeed any influence producing an unexpected effect. It is, however, a very definite term in electricity and magnetism, with a basis primarily directional, i.e., in terms of the opposite directions in which the bodies affected are attracted or repelled; though certain numerical characteristics of the opposite poles may be determinable.

3.4. Analysis of Examples

Returning now to our twenty-five candidates, let us consider each in turn, in the light of our provisional hypothesis.

For this purpose we have so far distinguished Directional opposites proper; a Scale moving from 0 to 100 with opposites at either end; two Scales placed end to end (moving from either end towards a middle neutral point or cut, or from the cut outwards to either end) with opposites at either end, psychological or functional; a Cut with opposites on either side, with various directional trends according as the cut is rectilinear or circular, wide or purely linear, and various possibilities of gradation; and, finally, directional opposites of Form due to rotation.

1. Black and White give us a clear example of the continuous scale, whether formed by least discriminable differences of light or pigment, or gradual increments of light and pigment physically measured. The psychological and physical scales differ considerably, and beyond the darkest black there is a psychologically 'darker' range of blue-violet, just as beyond the brightest white there is a psychologically 'brighter' range of yellow-orange; but from black to white we have a continuous graded scale, of a given kind, from a minimum (absence, negation) to a maximum. Verbally and visually it might also be described as the scale of grey, with black and white as its limiting members.

2. Hot and Cold differ from Black and White sensationally in the fact that they form two scales meeting in the neutral point tepid—the temperature of the human body. Each term covers a series of positive sensations on opposite sides of the cut, the limits in any particular individual being those of endurance. Both science and common-sense assume by analogies of effect, or by measurement, temperature hotter or colder than any that can be experienced. Science, however, constructs one continuous descriptive scale of measured readings from a naturally defined minimum (absolute zero) to an indefinite maximum.

Verbally, the terms Hot and Cold are applied in experience not only to the extremes, but, on either side of the neutral point, to a range of all but a relatively small number of intensities in the neighbourhood of the mean, covered by warm. Language does not indicate uniquely the cut marked by body-temperature, nor is the opposition

always definitely implied whether in relation to the sides of the cut, or the extremes. In this respect also, the series differs from the relative determination of Black and White as limits.

3. Open and Shut raise an instructive question of Definition. In the cast of a door on hinges, the directional opposite of shut is 'swung through an angle of 180°,' when the door is 'wide open' in the widest sense. Shut is then a limit for whose opposite there is no single name, and the scale is a scale of 'open' in its various degrees. Since, however, a door or a lid has the definite function of admitting or excluding air or objects, a functional definition equates open with 'not-shut,' the contradictory appearing as the other side of a denotational cut. All objects which are shut or not-open then fall on one side of the functional field; all which are not-shut or open, on the other.

4. Ruler and Ruled is, for many people, the most puzzling on the list. What could be more in opposition than commanding and obeying, master and slave, the free man on top who can "say Do this!—and he doeth it," in virtue of his strength, and the bottom dog so restricted that, in virtue of endemic hand-to-mouth disease, he can offer no resistance in accepting and carrying out the orders of his superior? King and subject, ruler and ruled, are, however, distinguished by logicians as *relative* terms, to be carefully differentiated from contraries and contradictories like black and white, just and unjust, wise and foolish.[1]

Relative terms, it is said, integrate or make up a complete thought, and the relation regarded from the one side is not identical with, nay, is the converse of the relation viewed from the other. Thus, Debtor and Creditor (I owe you—You owe me), Half and Double, Height and Depth make the terms of a sundered totality—like that characteristic asymmetrical pair, Husband and Wife.

The relation of the ruler is that of authority, the correlation of the subject is that of subjection to authority. The correlate is required before we can interpret the positive term. Thus, Uncle is meaningless unless we know he is uncle of Nephew and Niece. Double is double of Half, a Father is father of Son. But Good is not the good of evil.

Aristotle distinguished between relatives such as cognition and object, perception and percept, quantity and quality, where cognition is a real quality or act; we cannot, he maintained, say that there is nothing in it apart from reference to another in some mode, as we can of the other class of relatives such as husband and wife.

[1] Veitch, *Institutes of Logic*, p. 179.

It may also be urged that if ruler is only a ruler in virtue of the subjects whom he rules, and if ruler and subject are opposites, then an eater is the opposite of food, murderer of victim, and artist of picture; the ruler rules the ruled (= the subject), the eater eats the eaten (=the food or eats), the murderer murders the murdered (= the victim), the painter paints the painted (= the picture).

A special consideration relevant at this point is provided by the case of *father* and *mother*, when considered in relation to parent and child.[1] The class parents is exhausted by father (male parent of a child) and (not-father) mother (female parent). These are not relative terms, nor would they usually be regarded as opposites, though one aspect of such claims to opposition is found in Male and Female, with the intermediate Hermaphrodite.

It is clear, therefore, that however we decide to deal with correlatives, they must be carefully distinguished from the other forms of opposition here discussed.

5. Hard and Soft are sensationally a single scale of resistance to pressure—linguistically analogous to Shut and Open. There is no single linguistic term for a middle range. Very soft (of materials) merges into descriptions of liquid and gaseous states, and above a certain degree of resistance everything is uniformly hard to touch. Permeability by various tools – nails, chisels, screws, rams, heated metals, or electric drills—gives a scale of tests right up to the latest disintegrating methods of science; and hardness is thus relative to a particular level of experiment. Plasticity, resistance to change of shape under pressure, gives another scale. Scientifically, too, hardness is defined in terms of scratch, a substance being hard if it can scratch another; and as with warm, there is a mean in terms of scratch for ordinary language—the capacity to

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[1] In a memorandum on these and similar distinctions Mr. A. Wechsler refers to the confusion which sometimes arises between the opposition relation and the genetic relation.

"The latter" he remarks "is very clear and definite in mathematical symbology as the inverse denoted by the index^{-1}. A little closer attention to this may be of some value.

Thus $\mathrm{Sin}^{-1}X$ is that quantity from which X is derived by taking the sine.

2^{-1}, more fully $2^{-1} \times 1$, is that quantity, viz. ½, which when multiplied by 2^1 gives 1.

Regarded in this light ½ is not the opposite of 2 but the genetic inverse.

Infant and adult, Seed and tree, etc., are more properly classified as genetic inverts than as opposites.

Incidentally it may be useful to explore the possibilities of introducing a symbol for this relationship, e.g., Hen^{-1} = fertilized egg. If so, it would almost certainly be advisable to introduce a notation to indicate the type of development process concerned in the genesis, whether it is biological (b) accretive (a) temporal (t) etc. Thus more precisely Hen b^{-1} = that which when undergoing biological development produces Hen.

Nation b^{-1} = tribe.
Ocean a^{-1} = water."

To this, however, it may be objected that Sine is a two-termed relation, and that it is illegitimate to talk about 'inverses' except of relations, which 'Hen,' 'Ocean,' etc., are not.

produce lesions in the epidermis. Sometimes, therefore, we are concerned with stretches on either side of a cut, sometimes with a scale and two extremes.

When loud is opposed to 'soft' the analogy with black and white is closer; for degrees of softness, usually spoken of as degrees of loudness, have their formal limit in (black =) silence.

6. Right and Left give us a pair of directional opposites of a very fundamental kind. Though based on the structure and orientation of the human body, and in that sense relative to the position of the observer, they are exhaustive opposites based on an absolute cut. It is thus that enantiomorphs, mirror-images, screws, gloves, etc., are explained – in terms of rotational motion in opposite directions (right or left).

7. With Man and Brute we come to quite a different kind of oppositional problem. Can things in the external world have opposites; if some, then of what kinds are these? If opposition is based on direction, it may always take an adjectival form linguistically; but will this form have more than a linguistic basis?

A crucial question at this point may be: "What is the opposite of a circle?" We can certainly put nots before various terms in the familiar definition (not bounded by one line; not such that all points on the circumference, etc.). If there is no name usually or conveniently applied to the resultant class, or substituted for the resultant definition, it does not follow that the initial name has no opposite.

A domestic instance may also be given for consideration, namely, the screw-driver. A screw-driver is a tool for getting screws into a solid body; its opposite will presumably be a tool for getting them out—namely a screw-driver.

The problem, therefore, does not admit of any rough and ready solution. Moreover, the average person, if first confronted by the word *table*, and allowed to conclude that it has no opposite, will be ready enough to insist that a man, too, being a concrete object, can have no opposite. If, however, he agrees that a man is "a rational animal," he may forthwith allow that the opposite thereof is an irrational animal, and thereafter readily admit that brute is obviously the opposite of man.

We are, in fact, here confronted with a case which depends on verbal factors of a complex nature, to be dealt with only by a thorough investigation of opposition in relation to multiple Definition.[1]

The conclusion of such an investigation would be that opposites by Definition require special treatment. A complex symbol may be defined by many definition routes, which can be shown, on a panoptic diagram, as radii representing the scales to

[1] The significance of Antithesis for the technique of Exposition was first explicitly recognized by Jeremy Bentham. See *Bentham's Theory of Fictions*, 1932, p.91.

which they give rise—with the 'opposite by definition' at the periphery. Sometimes an object or class of objects may be uniquely indicated; sometimes a variety of opposites may present themselves, the result either of complexity or ambiguity (wherein lies the importance of a panoptic analysis for disputes, legal and general); sometimes a name may be available to fixate the opposition, sometimes not; sometimes no object or class of objects may be discoverable to which the definition can apply at any given moment. In the latter case, such objects may later emerge or be created – as when, by construction of a reversed gramophone,[1] the phonetic opposite of a laugh was heard for the first time over the Radio in November, 1928.

8. Up and Down provide a particular case of directional opposition, which many people characterize as relative and therefore unsatisfactory; though they may admit Right and Left as basic, in spite of, or because of, the fact that they are entirely relative – to the fundamental origin of all our distinctions, namely, our own bodies. To diagrammatize them by a single straight line such as gives us right and left on either side of a cut, when we are thinking of a ball thrown up into the air and falling down in its own path, we must place ourselves at a fixed point, as with trains passing one another in opposite directions. When Up and Down are treated in terms of motion on a single scale, Top and Bottom, as the opposite extremes of that motion, are a type of opposition which must be carefully distinguished from Right and Left, the two opposite *sides* of a cut.

Simple directional and spatial opposites reveal some curious linguistic anomalies. *Over* and *under*, *above* and *below*, prepare us to oppose *on* and *off*. But where *on* means 'above and touching' (a table) it has no single verbal opposite, and confusions are apt to arise, for which the prevalence of gravitational attraction is responsible. We commonly describe a fly as resting on the ceiling, presumably because the ceiling presents only one surface to out gaze, and we describe the situation from the standpoint of the fly. But a wasp detected crawling along the under surface of a table would not be described as on the table, nor yet as under it or off it, but as 'on the under surface.'

9. Acid and Alkali were said to be opposite because, when mixed in certain proportions, the result is a neutral product (a salt) with neither acid not alkaline properties. We have here a parallel with colour complementaries reaching a neutral point at the cut between the two scales. It may be noted, however, that the modern

[1] See the writer's *A B C of Psychology* (2nd Edition, 1930), p.248.

definition of acid refers to a solution with a pH less than 7.0, and of an alkali with a pH more than 7.0, which defines more precisely the neutral point between the scales.

10. Pleasure and Pain involve psychological distinctions of comparatively recent origin. Acid and Alkali are selected as typical opposites by the chemically minded, with as much assurance as the logicians of the nineteenth century agreed to name Pleasure and Pain as typical contraries. Today, however, few psychologists would admit the opposition. Pleasure and Displeasure (or Unpleasure) are now opposed, and pain is a special form of sensation with a separate mechanism. The Pleasure scale, psychologically considered, is regarded as analogous to warm and cold, the opposition being on either side of a fairly wide neutral cut.

Many intricate verbal issues must, however, be faced before we can arrive at a conclusion about the opposition of Pleasure and Pain as conceived by writers like Bentham; and the utilitarian formulation of the value problem is by no means disposed of by this reference to the findings of modern psychology. Good and Bad, Desire and Aversion, are also involved in any such terminological review.

11. Visible and Invisible give a typical contradictory pair, divided like Open and Shut on the functional definition. The negative (= not-visible) happens, like Impossible, to be marked by a single word. The fact that the position of the cut varies with acuity of vision makes the reference 'relative' in practice. Definition, average range, and the scientific limit of optical phenomena in the theory of light, may all be relevant to a particular discussion; but on any given occasion, and with any given definition, the opposition is definite, and the diagram is that of a cut on the analogy of Inside and Outside.

12. Town and Country. If this is taken as a typical case of opposition by definition (based on statistical density of population, houses, etc.), the value of the opposition in practical application is relative to the growth of suburbs. In due course the distinction might vanish altogether throughout the entire surface of an urbanized planet. An opposition originally created by definition (in response to factual requirements, on the basis of a cut) is thus shifting to a scale whose extremes are being gradually obliterated by the expansion of its middle (suburban) range. A temporary stage is thus reached where semantic complications are produced by legal definitions in terms of difference rather than opposition. Finally, in such cases, the oppositional definition may retain historical significance only.

13. Learned and Ignorant are hardly more satisfactory for similar reasons, historical and verbal. Any definition which produces a clear opposition will to-day conflict with a number of popular usages—in an entirely popular field. In an age when

learning was limited to a definite subject matter and the ignorant were those who did not possess it, there was even a definite cut produced by literacy. But with the growth of a literary suburbia, and the multiplication of subject matters, the purely bucolic extreme in civilizations has faded into insignificance. New oppositions, such as *scientific* and *literary*, have arisen and been superposed on the old pair, which now have a literary rather than a scientific value.

14. Possible and Impossible differ from Visible and Invisible in certain respects. The visible is what it is possible, the invisible what it is impossible, to see; so that the relativity turns primarily on the variations in visual ability.

The possible (what *can* be, or be done) takes us one stage further from such special problems of individual capacities and variations, and is a linguistic device for covering in another form, or with reference to the future, various statements about scientific generalizations which are otherwise formulated in terms of 'laws.' Whatever does not conflict with any, or any particular, law is possible; by extension or metaphor, other laws and conventions are covered—e.g., those relating to marriage ("It is not possible to marry your deceased wife's sister in England"), dress ("You cannot function in the City without a top-hat"), or symbolic form ("You cannot put a preposition after the noun it governs"); even an 'impossible' person is only one whose behaviour is such that you cannot take him to a particular locale. Thus scientists may disagree as to which laws are established, and whether miracles can happen, without raising any doubt as to the meaning of possibility.

The possible (believable) has two main sub-divisions when regarded from the point of view of belief, (*a*) the *certain* (what we do believe) and (*b*) the *probable* in all its grades down to the improbable (which we doubt, and which merges into the impossible). The statistical grounds for the various degrees of belief constitute the theory of probability, which is thus an inquiry into various forms of contextual complication and analysis. These grounds involve two factors, (*a*) the relative frequency of realization of any event and (*b*) the reliability with which this realization can be expected in further cases.[1] Similarly, when regarded from the standpoint of methodology and verification, we have the various degrees of the hypothetical, from the generalizations or laws which we assume, through hypotheses which we believe or doubt pending further evidence, to fictions (which are impossible in the universe of fact though possible in that of methodology or imagination), and finally to the

[1] Cf. Sargant Florence, *The Statistical Method in Economics,* Chapters V and VII.

impossibilia, which conflict even with our symbol structures (nonsense) or with the nature of our sensations (as that one and the same surface can be both red and green).

Impossible is thus the opposite both of possible (not contradicting the laws) and, in terms of belief, possible (not-unbelievable). And since the believable (CAN) is either certain (MUST, WILL) or not certain (MAY), the impossible (CANNOT) also appears linguistically as the extreme of a psychological (Black-White) scale from certain belief to certain disbelief, with a middle range, probable (= grey), neither believed nor disbelieved, but doubted.

In the case of illegal (contrary to the laws), we can similarly envisage the two-fold division of legal into what is rewarded by the laws and what is neither praised nor punished (but allowed). If 'rewarded by the laws' had a special positive term (= certain), such as 'pregal', illegal would appear linguistically as its opposite—there being no special term, such as 'pegal', for what the laws penalize.

15. Kind and Unkind is a peculiar linguistic opposition in a descriptive series with two cuts and three pairs of opposites. At the end we have the degrees of very kind kindness, merging linguistically into attitudes typified by maternal and other forms of devotion to little tots or spouses – for which 'very kind' would seem a litotes; then kind, with a cut at not-kind, marking either indifference or the beginning of a scale of unkindness (on the other side of the cut) whose extreme, cruel, can itself be quantified in terms of barbarity and fiendishness.

We thus get the oppositions:

Kind—not-kind, Kind—unkind, Kind—cruel.

The ethical judgments involved give analogies with good and bad, with the affective and the pleasure series; while descriptively there is a close parallel with the opposition of hot and cold.

16. Good and Bad introduce three specifically verbal complications:

(*a*) The fictional; since the adjectival form is a linguistic abbreviation for the descriptive definitions into which it must first be translated. Fictional opposition, typified by Beauty and Ugliness, Freedom and Slavery, requires separate treatment.

(*b*) The comparative; better and best, worse and worst. The good-bad series is often linguistically the scale of *better*, on the analogy of grey in the black-white series. Linguistically, too, there is the theological metaphor by which the Deity is Goodness (as well as Light)—an extreme to which men, who are good only in so far as they have that attribute in varying degrees, can only hope to approximate. The Devil, in this

context, as the embodiment of Evil and Darkness, is an hypostatized fictional opposite presiding over the ultra-violet region beyond the extreme of the Light-Dark affective-volitional scale of ethical Valuation.

(*c*) Indifference; when the opposition of good and bad is by definition such that, for a given purpose, there is a neutral range which is neither good nor bad, we may be dealing either with a wider cut or with functional irrelevance.

17. Work and Play are opposites by definition, with a considerable fictional element in popular usage. The definitional factor will usually imply the complications involved in the analysis of *freedom*; and a variety of social and emotive overtones may also be present. A preliminary treatment in terms of Panoptic definition charts is therefore necessitated.

18. Ill and Well. The linguistic factor here includes the complications of Normal and Abnormal as well as of Good and Bad, with a specifically functional basis. As with Work and Play, a semantic chart is required before we can differentiate the usages which give a cut from those which are based on a scale.

19. Easy and Difficult are adjectival abbreviations which have not shifted far from the original cut on which their opposition, as contradictories, was based. In part they are derived from the Hard-Soft analogy, in part from the Smooth-Rough. Indeed, a soft job is as readily opposed to a rough one as to a tough (hard); and making smooth a path is opposed to the hard, no less than to the rough and thorny, road of the martyr. In popular usage, however, there is a tendency to admit a middle range, in the suggestion that what is 'not easy' is not necessarily difficult. The difficult is 'by no means easy'; though what is not difficult is more nearly easy. But the nuance is so slight that *hard* and *not-hard*, by an easy metaphor from resistance[1] (= hindrance), would adequately cover the whole field, were it not for the difficulty that *easily* is to-day no longer equivalent to *not-hardly*.

20. Before and After. Since the time-series is diagrammatized by a single directional line, exactly like *in front of* and *behind*, the most obvious account of the opposition is as a metaphor from this spatial direction. Before = in front of a given moment to which we progress along the line; and on the other side we come to what is (behind it or beyond it or) after it. As with all cuts, we may have a special name for the dividing line ('now', or 'neither before nor after'), which may have some special

[1] Conductivity for and resistance to (the Passage of) electricity are measured as 'reciprocals.' If a certain number expresses the conductivity of a body, its resistance is one divided by that number. This is parallel to difficult and easy. Conductivity expresses the ease with which electricity goes through, resistance the difficulty of pushing it through.

theoretical significance. The opposition by cut is clear, but in no other case does language present such curious anomalies.

What is behind, as opposed to what is in front of, the cut in this progression might well be the future. But what we call 'behind' is the past. Again, what has passed a given line towards which we are progressing, and is therefore past, is something in front of us. What is 'in front of' us is in the future, so that what is past is clearly in the future. But since what is in the past is 'what has gone before us,' and 'what has gone before us' is what is now before us, viz., the future, the future is clearly in the past. (The future, says the clairvoyant, is all before her.) There is no difficulty, however, about any of this if we know why we make our cut, and how our definitions are framed.

21. Male and Female. This opposition has many points of similarity with Town and Country. Both are affected by the Population problem; and the cut of Genesis has recently been undermined by a hermaphroditic suburbia, foreshadowed in ancient mythology. Quantitative theories of the sexual factors, and the recognition of complex psychological correlations, have introduced scalar possibilities. What was once a purely bipartite definition, in terms of function or form, must now be revised in the light of modern knowledge, needs and novelties. But male and female are likely to remain in some sense the opposites of sex generated by a cut.

22. Love and Hate. The opposition of any complex emotional state to any other, equally complex and symbolized by equally ambiguous terms, naturally involves intricate problems of definition. We have here to relate our account to attraction and repulsion, sympathy and antipathy, like and dislike, friendship and enmity, egoism and altrusion. Pleasure, Captivation, and Infatuation must be considered, no less than sexual passion, family affection, and maternal devotion; and there are the relations of the emotions and the sentiments. In short, there will be a variety of cuts, with an even greater variety of linguistic anomalies in the total series.

23. British and Alien. It is not often that so unpromising a verbal pair coincides completely with logical contradiction. Alien, moreover, is said to be best defined in negative terms as 'one who is not a citizen of the British Empire,' since "the name 'alien' represents a notion whose sole differentia is just this negative attribute."[1]

The restriction of the universe of discourse is here to persons, whereas in the case of British and Foreign it is to material things (we do not speak of 'foreign honesty'). 'An alien' is a foreign person, though 'a foreign' is not a foreign thing.

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[1] Welton, *Logic*, Vol. I, p. 118.

24. Red and Green require very cautious handling. The average man agrees that what is red cannot also be blue, though anything may be purple or reddish blue; but he would not single out green for particular treatment in this connection, even if he is familiar with the arrangement of the colour-circle. He may hesitate if asked to consider the nature of complementaries, but that remains a special consideration.

The sensitive colourist, on the other hand, will be emphatic that *red* and *green* provide the typical and indubitable case of opposition. They pull him apart, as it were, emotionally, and the fact that they neutralize one another as complementaries is merely a corollary of their fundamental opposition. No form of emotional contrast, dominance-submission, inducement-compliance, or pleasantness-unpleasantness, is more certain in his psychology.

Now at all points in the Red-Green or Blue-Yellow series here involved we have a preponderance of one or other of the named opposites – except in the very middle, which partakes of neither. It is grey; and so is the middle point in the series Black-White, a pair of extremes about whose eligibility as opposites there is much less likelihood of disagreement.

Yet whereas we can speak of the grey scale instead of the Black-White scale, Black and White being then regarded as two extremes of grey, no such possibility is offered by the series Red-Grey-Green. If however, we mix pigments instead of lights we get a series Red, Yellow-Orange, Green, in which Red and Green are still opposites, but are extremes of a Yellow-Orange series with a *positive* segment in the centre which differentiates it from either of the previous ranges.

25. Normal and Abnormal. This is one of the most disconcerting forms of antithesis, since though there is a verbal opposition, between the two contradictories, the normal, like the mean, is that which is not on either side of a cut, nor at either end of a scale. What is the opposite of grey? Not-grey, the contradictory, has black and white (on the black-white scale), and as with all neutral terms, the other side of the cut covers 'black or white.' The average, the neutral, and the mean have, therefore, no single opposite on a scalar projection, and like space, direction, and other features of the structure of opposition, must not be allowed to create bogus difficulties in their adjectival form.

3.5. Schematic Summary

By thus testing the hypothesis of the Scale and the Cut on a selection of pairs commonly regarded as opposites we find that in every case the directional factor is relevant.

The typical directional opposites (based on the position of the human body) are *Right* and *Left*, from which is derived the cut most clearly seen in *Inside* and *Outside*.

Up and Down from the midway standpoint of the observer, on the analogy of *Right and Left*, divide by a cut; but the extremes of the scale on which bodies move up and down (due to gravity) give us *Top and Bottom*, contrasting head and feet with the right and left sides.

All forms of negation, dichotomizing a field, are in terms of a cut; and only where the class so cut is limited to two members will the linguistic opposite coincide with the logical negation or contradictory, as in the case of *Hard and Soft*.

Opposite sides of a cut: opposite ends of a scale. Of the latter, *Black and White* are the type. Either side of a cut may also be quantified, but where two scales placed end to end divide at a neutral point, the bottom or neutral point of either scale does not give rise to a sensational or linguistic opposite.

Psychological opposites such as Red and Green are a special case of felt antagonism correlated with a scientific opposition, and are due to some form of physiological incompatibility translated emotionally into directional terms. Enantiomorphs, similarly, recognized as opposites in form, are to be explained as directional opposites by rotation.

Opposites by Definition as well as Fictions in opposition introduce linguistic factors which demand separate treatment.

Since every scale has a maximum and a minimum, and the extremes of every scale (with the exception above stated) provide a possible linguistic opposition, the special problem of opposites by definition arises in the case of every complex object, natural, artefact, or organism.

These can best be dealt with on the panoptic Diagram of Opposition in connection with the Theory of Definition, but the question of Fictions in relation to opposition presents some peculiar features.

3.6. The Verbal Factor

From the technological standpoint, as envisaged by Basic English, noun forms are fundamentally names of movable objects, while the adjective is primarily the name of a sensational element in our experience. Direction, as might be expected, in spite of its somewhat more complex basis, is symbolized adjectivally; and since in all opposition we are ultimately describing directions (Right and Left or Top and Bottom, of areas or scales), it is only shapes or sensations, when graded in scales, which can properly be said to have opposed sides or opposed extremes. Objects will therefore appear as opposites only in so far as some sensational factor is involved, i.e., in so far as adjectival elements, admitting of quantification or dichotomy, enter into their descriptions or definitions.

But in addition to the basic adjectival forms (the names of sensations), linguistic abbreviations for most functional or descriptive features of events can also appear as adjectives. Pairs such as new (old), free (controlled), beautiful (ugly), are then treated on the analogy of sensations, and a variety of vague contrasts emerge. In proportion as they are removed from direct descriptions of perceptive elements into which they must be translated, such fictional adjectives give rise to controversy and emotive distraction.

From any adjective, however, a substantive form can be generated, which is treated grammatically as though it were the name of a single entity. Since, therefore, the adjectival equivalents of the resultant substantives may have opposites, or be treated linguistically in oppositional pairs, it will seem to those who neglect the theory of fictions that, since the substantives here will likewise work in pairs, the 'entities' for which they stand must also be opposites.

Such a conclusion would then further suggest that real entities (movable objects, etc.) may have true opposites. This is a linguistic illusion, and can only be dispelled by careful retranslation of the deceptive symbols, supported by the technique already mentioned for dealing with Opposition by Definition.

4.

Diagrammatic

In the light of this discursive approach we may now proceed to the technique of diagrammatization. Opposition is based on spatial experience. It can therefore best be understood with the aid of the same sort of 'ideal blackboard' which geometry uses in its analyses, and which is probably essential to any order whatsoever.[1] We are dealing with a visual schematism, and the diagrams which we require to illustrate the various types of opposition and their relations to one another will resemble those both of geography and of mechanics: they will range from formal description of fact to a chart of mental projection in two dimensions by which metaphors can be tested.

> Great liteature is simply language
> charged with meaning to the utmost possible degree.
>
> Ezra Pound

[1] Nicod, *The Foundations of Geometry*, 1929, pp.136-7.

4.1. The Importance of Body

The symbolic forms which have been developed in ordinary language for the expression of these distinctions have been crystallized not only in terms of two-dimensional projection, but also in a very special relation to the human body.

In the first place, the spatial cut has been identified with the body itself, and more specifically with its vertical axis, in the opposition of *sides*, right and left, and the opposed rectilinear directions, right and left, along the arms in a horizontal position.

Secondly, the *extremes* of the scale are represented by the head and feet, the two opposite ends of a single continuum, measured primarily upwards, from the base to the top, as with the minimum and maximum of the thermometer.

Hence the convention whereby *In front of* and *Behind*, which also give us the opposition of Before and After, Future and Past, are diagrammatized on the horizontal line of right and left—in terms of the position of the body (facing either to the right or the left) and of progress along the line; while Up and Down[1] are primarily movements from one extreme of the vertical scale to the other.

This dependence of our symbolization of opposition on the symmetry of the body is emphasized when we consider the oppositional requirements of an actinian such as the star-fish. We, too, have elaborated secondary oppositions for the upper and lower *surface*, the opposite ends of a *diameter*, *radial* opposition, etc.; but since they are not 'our' surface, 'our' diameter, and 'our' radius, neither our primary projections and diagrams nor our linguistic metaphors are in these terms.

Such, then, is the framework on which our *diagram* of opposition in its most comprehensive sense is based, but it would not be obvious from this account why the sides of a cut and the ends of a scale, even if they do enable us to cover the field systematically, have been so universally included under one term before any conscious attempt at systematization arose.

The *op* in oppono, the *gegen* in Gegensatz, goes back to a third characteristic of the human body. It not only has two sides and two ends (symmetry), but it 'faces' one way (asymmetry). When, therefore, it faces itself in a mirror and confronts its

[1] Diagrammatized, in terms of a horizontal cut, as directions above and below, north and south.

enantiomorph, or when it faces another body, an enemy (enantios), that which it faces, that which is placed over against (anti-contra-ob) it, is the primary opposite from which the long line of metaphor is derived.

When the opposition is static, when the mirror-image, or the other body, is merely observed to be 'facing' its opposite, we get a form of spatial opposition which would strictly apply only to objects which have 'faces.' It is only the dynamic, the directional, aspect of the situation which enables us to generalize the term; for both individual facings and the facings of armies, or more generally the facings of all opposed forces, are directional oppositions. The armies, the forces, approach one another and our diagram of direction is →←, whereas with the body as dividing line (cut) it had been ←→.

If the opposite ends of a line approach one another symmetrically, they will, like the armies, meet in the middle. Viewed statically, they are just positional opposites.

If armies 'face' one another on two sides of a river (the cut), the sides of the river are also diagrammatized as opposites. Whatever the dimensions of the cut, whether it be an ocean or an imaginary line, its sides are opposed; and it has a neutral, central, or zero point to which the opposites approach, from which they diverge, or which divides (cuts) them.

With the cut, opposites are directions or areas diagrammatized by the total stretches on either side of the cut. If our cut is an imaginary line, we can cover the field as in the case of negation; a single term will suffice with the negative if the two opposites exhaust the field. We can therefore dispense with an extra symbol only where our referents or our definitions preclude ambiguity.

Where the cut has extension and is not homogeneous with the opposites, as in the case of the opposite sides of a river or of a picture frame, we shall require at least three terms, as well as when we have two scales end to end (Red-Neutral-Green).

In the case of the scale, we require only one term if the two halves are divided by a cut, as with Hard and Soft. But where the opposition is between extremes we always need at least three (Black, Grey, White), or sometimes more (Top, Upper part, Middle, Lower part, Bottom).

We inhabit a language rather than a country.

Emil Cioran

5. Notation

5.1. Notation

In order to simplify the description of the various kinds of opposition for purposes of Definition a simple form of Notation is desirable. The value of such a notation in practice will depend partly on its convenience both for typewritten and printed material. The following symbols have been devises to avoid all the difficulties which usually attach to mathematical and logical abbreviations:—

0	=	Opposition in all its forms.
0		when not further qualified = the typical form of opposition by Cut.
00	=	Rectilinear directional opposition by cut. Thus Right 00 Left = Right is the rectilinear directional opposite of Left by cut; whereas Inside 0 Outside indicates merely the fact of diagrammatization by spatial cut.
0+	=	an opposite by cut scaled down to the cut, the side of the cut being often named by its extreme point. Thus Red + + Green = Red (scaled to neutral) is the opposite of Green (scaled to neutral) in the Red-Green series composed of two scales end to end.
0—	=	Opposite Ends. Thus Top 0 – Bottom.
0— —	=	an opposite in a continuous scale whose other extreme is its opposite. Thus Black 0 – – White.
m	=	an opposite by cut scaled to a medium value.
i	=	an opposite by cut scaled to indifference.
n	=	an opposite by Negation (cut). Thus Visible 0 + n Invisible = Visible is the scaled opposite (by cut) of its negative (not scaled); and White 0 – – n Not-white (on the Black-White scale) is the extreme opposed to the rest of the scale by its negation; whereas White 0 Not-white does not limit the context to the achromatic field. When White, *as the extreme*

		of a scale, is negated, the cut is at the extreme, so that the class Not-White covers the *rest* of the scale.
d	=	an opposite by the negation of a Definition. Thus British 0 d Alien, where there is no grading on either side, and Man 0 + d Brute, where the defining adjective can be graded and a controversial borderland may be expected.
s	=	Opposition of symmetrical stretches. Kind 0 s Unkind, though there are more extreme parts of the scale with separate names which also form opposites.
f	=	a Fictional opposition. Thus Liberty 0 f Slavery, where the fictional entities must be symbolized in terms whose opposites can be analysed, before further classification is profitable.
cor	=	Correlative (opposed only by special definition).

In terms of this notation we get:—

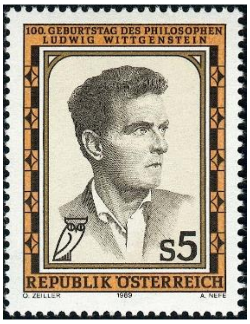
Black 0 – – White.
Hot 0 + + Cold.
Open 0 + n Shut.
Ruler 0 cor 0 d Ruled.
Hard 0 + m + Soft.
Right 0 0 Left.
Man 0 + d Brute.
Up 0 0 Down.
Acid 0 + + Alkali.
Pleasure 0 + + d Pain.
Visible 0 + n Invisible.
Town 0 d Country.
Learned 0 + + d Ignorant.
Possible 0 + n Impossible.
Kind 0 + i + s Unkind.
Good 0 + + d Bad.
Work 0 d Play.
Ill 0 d Well.
Easy 0 + m + Difficult.
Before 0 After.

Male 0 d Female.
Love 0 + i + d Hate.
British 0 n Alien.
Red 0 + + Green.
Normal 0 n Abnormal.

This is at least a first approximation to the sort of elementary notation which linguistic analysis requires.[1] It is, however, always an improvement if a notational system can be made to *look* more like its referential counterpart, and if provision is made for subtler discriminations within certain limits. These are matters requiring more symbolic experience than the writer is anxious to acquire, and more experience of the limits likely to be dictated by utility than any adept in oppositional notation is likely to obtain in this generation.

Moreover, in the above scheme, the notational ingredients have been coaxed into the interstitial field between the opposites, so that the sentence may read *A* is the opposite, by * * *, of *B*.

For certain purposes, however, this device may have no particular advantages, and the following alternative technique, with somewhat different conventions has been suggested.[2]



[1] See Appendix.
[2] By Mr. Max Black, whose volume on *The Nature of Mathematics* will shortly be added to the International Library of Psychology, Philosophy, and Scientific Method.

5.2. Conventions

1. Two signs which are to be symbolized as opposites are written side by side. In cases of ambiguity a small o may be added to the second word. Thus AB and ABo both symbolize that B is the opposite of A.

2. The existence of a *cut* between the referents of A and B is indicated by writing I between them. If it is further desired to indicate the nature of the cut, the I can be replaced by other letters. Examples: AIB indicates that the referents of A and B are separated by a cut; AmB = the cut is a medium value; AiB = the cut is indifferent with respect to A and B etc.

3. If A or B scale down to the cut this is indicated by three dots. Examples: A…IB = A scales down to the cut but B is merely on the other side of it; AI…B = B scales to the cut but A is on the other side of it.

4. Opposite ends indicated by A – – B (no cut) or by AB opp.

5. The nature of the opposition is indicated by a small letter *after* the two opposites, e.g., AIBd (negation by definition).

For the above scheme it may be claimed (a) that the signs used *look* like the scale referred to, and are therefore easy to learn and teach. Also that provision is made for such discriminating as A – …B (A is an extreme end but B scales down and there is no cut). The following typical examples would then emerge: –

1 Black……White.
2 Hot…I…Cold.
3 Open…I Shut n.
4 Ruler Ruled cord.
5 Hard…m…Soft.
6 Right I Left dir (directional).
7 Man…I Brute d.
8 Kind…i…Unkind s.
9 Easy…m…Difficult.
10 Top – – Bottom, or
Top Bottom opp.

In a full formulation of the conventions it would be necessary to add to rules 1 to 5 a list like the following:—

Signs for use between opposites and characterizing the cut:

m	=	medium value.
I	=	indifferent with relation to the opposites, etc.

Signs for use after the opposition to characterize the opposition:

n	=	opposition by negative.
d	=	opposition by definition.
f	=	fictional opposition.
dir	=	directional opposition, etc.

In both systems these could be added to as required.

Those who know nothing of foreign languages, know nothing of their own.

Goethe

Appendix

Though the theory of Opposition here outlined has a direct bearing on the whole field of verbal controversy—for the attainment of what may be called Polar Bearings[1]—its immediate orthological application is mnemonic.

How many words does the average man need for purposes of general communication; and can the task of memorizing and manipulating these words, already reduced to an absolute minimum, be further simplified by a systematic treatment of opposites?

Basic English, a form of universal language in terms of which almost everything may be discussed without undue violence to ordinary English idiom, consists of 750 nouns and adjectives and 100 operators (words which are either the names of physical operations or operate the other words). Not everyone, however, desires to attain the results which are possible with the full Basic List—at any rate as a first stage; nor need every word whose use is implied be actually exhibited in a reference list. There is a real advantage to the learner in a Mnemonic first stage, complete in itself—which can be printed on a postcard (with the equivalents in his own language if desired), and carried about on his person during the initial stages in trains, tubes, trams, and trenches.

Our lists above have therefore been prepared for those who wish to reduce phonetic assimilation to a minimum. It consists of 500 nouns and adjectives—together with the 30 names of common substances, and 70 operators: 600 in all, which can be learnt in 6 hours by an expert or 24 hours by the inept.

The words omitted from the General Vocabulary fall into three groups:—

1. Names of *animals, plants, and foods* which the General Vocabulary covers in so far as they have world-wide diffusion.

[1] See, for example, B.B. Bogoslovsky, *The Technique of Controversy*, 1928, Chapter VI, for a helpful and disarming approach to the morass of pedagogical pseudo-quantification.

2. *Second-level conveniences;* words, that is to say, which can be dispensed with by a clear but somewhat clumsy substitute.

3. *Opposites*.

If words which have 'opposites' are learnt in pairs, it is unnecessary to burden a mnemonic list with both members. Our account of opposition provides a criterion and a justification for the elimination of one or other member of any given pair. And since 20% of the 850 Basic words may be paired, the essential core is thereby rendered appreciably more amenable.

There are some, no doubt, to whom the small saving of time thus effected may seem a trivial reward for so much discursive ratiocination. But let us examine the matter more concretely.

Theoretically, as we have seen, the entire vocabulary of 850 words can be memorized by a good learner in less than 10 hours. In practice, some 30 hours would probably be required by the average learner, and the uses of the words might well occupy him for double that time—in all, say three hours a day for a month, or 30 minutes a day for six months. Experience suggest that in every case a saving of some two hours may be effected by the technique of memorizing in pairs the 20% classified as 'opposites.'

Let us suppose, then, that before the end of the present century the vocabulary has been memorized, as an International Auxiliary Language, by half the world's population, and that within a hundred years it will be familiar to everyone. On this supposition, and if the relevant population curve approximates to that of Europe and America during the past century, many persons now living would be able to say: "That little treatise on Opposition effected a saving equivalent to the *entire conscious existence of over 70,000 human beings*—or the entire working life of over 100,000. So the author was not so daft as the reviewers, if any, made out." At all events, some sort of felicific calculus is nowadays an increasingly active factor in the motivation of orthological research.

BASIC ENGLISH (MNEMONIC)					
OPERATORS , ETC.	NECESSARY NAMES		COMMON THINGS		QUALIFIERS
Come*	Act	Look	Angle	Skin	Able
Get	Addition*	Machine	Arch	Spade	Angry
Give	Adjustment	Man*	Arm	Sponge	Awake
Keep	Agreement	Manager	Army	Spoon	Black
Let	Amount	Mark	Baby	Spring	Boiling
Make	Animal	Market	Bag	Square	Bright
Put	Attempt	Measure	Ball	Stamp	Broken
Be*	Attraction	Memory	Basket	Star	Brown
Do	Authority	Mesh	Bath	Station	Certain
Have	Balance	Mine	Bed	Stem	Cheap*
At	Base	Minute	Bell	Stick	Chemical
About*	Belief	Month	Bird	Street	Clean*
Across*	Birth*	Mountain	Boat	Sun	Clear
After*	Bite	Name	Book	Table	Common
Against*	Blow	Need	Bone	Tall	Complex*
Between	Body*	Number	Boot	Thread	Complete
By	Breath	Offer	Bottle	Throat	Conscious
Down*	Brother*	Opinion	Box	Ticket	Cut
From*	Building	Order	Boy*	Toe	Dark
In*	Burn	Organization	Brain	Tongue	Deep
Off*	Burst	Ornament	Brick	Tooth	Delicate
Over*	Business	Page	Bridge	Town	Dependent
For	Cause*	Part	Brush	Train	Direct
Of	Chance	Piece	Bulb	Wall	Early*
Till	Change	Place	Button	Wheel	Elastic
As	Colour	Plant	Card	Whip	Electric
Than	Committee	Play	Cart	Whistle	Equal
A	Comparison	Point	Chain	Window	Fat
The	Competition	Poison	Chin	Wing	Fertile
Any	Condition	Porter	Church	Wire	First*

Charles K. Ogden: *Opposition*

All*	Copy	Price	Circle	**COLLEC-TIVES, ETC.**	Fixed
Every	Cough	Profit*	Cloud		Flat
Some	Cover	Pull*	Coat	Approval*	Free
Such	Crush	Punishment	Cord	Behaviour	Frequent
Other	Cry	Purpose	Cup	Brass	Full
This*	Current	Quality	Cushion	Bread	General
Who	Curve	Question*	Door	Canvas	Good*
What	Dance	Ray	Drop	Care	Grey
I	Danger	Reason	Ear	Cloth	Great*
He	Day*	Record	Egg	Comfort	Hanging
You	Debt*	Regret	Engine	Control	Happy*
And	Decision	Relation	Eye	Damage	Hard*
But	Degree	Religion	Face	Destruction	Healthy*
Or	Desire	Request	Feather	Digestion	High*
Because	Development	Rest*	Finger	Distribution	Like
If	Direction	River	Fish	Driving	Living*
Though	Discovery	Road	Flag	Dust	Long*
While	Discussion	Roll	Floor	Education	Loud
How	Disease	Room	Foot	Food	Male*
When	Division	Rub	Fork	Glass	Material
Where	Drink	Rule	Frame	Grass	Medical
Why	Edge	Run	Garden	Growth	Military
Again	Event	Scale	Glove	Help	Natural
Ever	Example	Sea*	Gun	Humour	Necessary
Far	Expert	Seat	Hair	Jelly	New
Forward	Fact*	Secretary	Hammer	Knowledge	Normal
Here*	Family	Sense	Hand	Learning	Open*
Now*	Farm	Servant	Hat	Leather	Opposite
Together	Father*	Shade	Head	Linen	Past*
Well	Fear	Shock	Heart	Love	Physical
Much*	Feeling	Side	Hook	Meat	Political
Not	Field	Sign	Horn	Metal	Poor
Only	Fight	Slip	Hospital	Middle	Possible
Quite	Fire	Slope	House	Mist	Present
So	Flight	Sneeze	Island	Money	Private*
Very	Flower	Song	Kettle	Motion	Probable
Tomorrow	Fold	Sound	Key	Music	Quick*
Yesterday	Force	Sport	Knife	News	Ready

Charles K. Ogden: *Opposition*

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North	Form	Start*	Knot	Paint	Red*
East	Friend	Statement	Leaf	Paper	Regular
NATURAL SUBSTANCES	Front*	Step	Leg	Paste	Right*
	Fruit	Stop	Line	Pleasure*	Round
Air	Garment	Story	Lip	Police	Safe
Blood	Government	Suggestion	Lock	Powder	Same*
Butter	Grain	Support	Map	Power	Secret
Chalk	Grip	Surface	Match	Print	Separate*
Coal	Guide	Swim	Moon	Produce	Serious
Copper	Hole	System	Mouth	Property	Sharp
Cork	Hope	Talk	Muscle	Prose*	Smooth*
Cotton	Hour	Tax	Nail	Rain	Solid
Earth	Increase	Test	Neck	Range	Sticky
Gold	Industry	Thing	Needle	Rate	Stiff
Ice	Insect	Thought	Nerve	Reading	Straight*
Iron	Instrument	Touch	Nose	Science	Strange
Lead	Interest	Tree	Pen	Self	Strong*
Milk	Jelly	Turn	Pencil	Sex	Sudden
Oil	Join	Use	Picture	Size	Sweet*
Rice	Judge	Value	Pin	Sky	Tall
Salt	Jump	Vessel	Pipe	Sleep	Thick*
Sand	Kick	View	Plate	Soap	Tight*
Silk	Kiss	Voice	Plough	Smell	Tired
Silver	Language	Walk	Pocket	Space	True*
Smoke	Laugh	War	Prison	Steel	Violent
Snow	Law	Waste	Rail	Taste	Warm*
Steam	Letter	Wave	Ring	Teaching	Wet*
Stone	Level	Way	Root	Thunder	Wide*
Sugar	Lift	Week	School	Time	Wise*
Tin	Light	Wind	Seed	Trouble	Wrong
Water	Liquid	Word	Shelf	Weight	Yellow
Wax	List	Year	Store	Wine	Young*
Wood				Work*	
Wool				Writing	

* denotes opposites

To a teacher of languages there comes a time when
the world is but a place of many words
and man appears a mere talking animal not much more wonderful
than a parrot.

Joseph Conrad, *Nostromo*.

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> **— Bosh ! Stephen said rudely. A man of Genius makes no mistakes. His errors are volitional and are the portals of discovery.**
>
> James Joyce, Ulysses, Episode Nine

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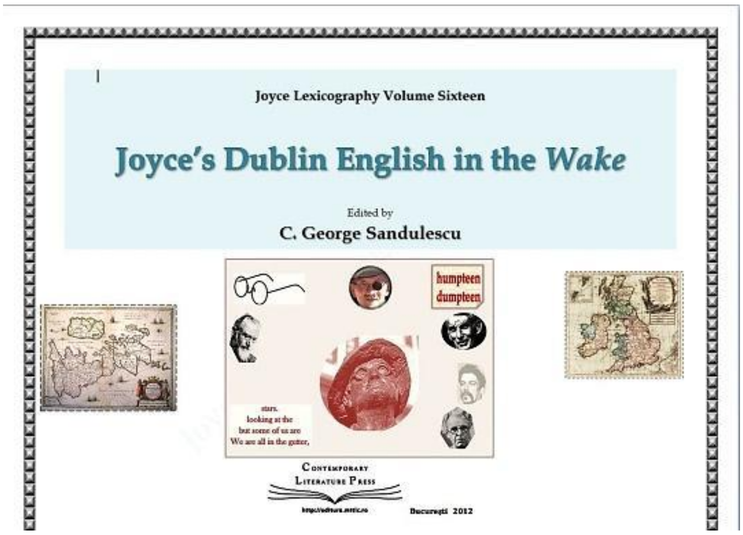
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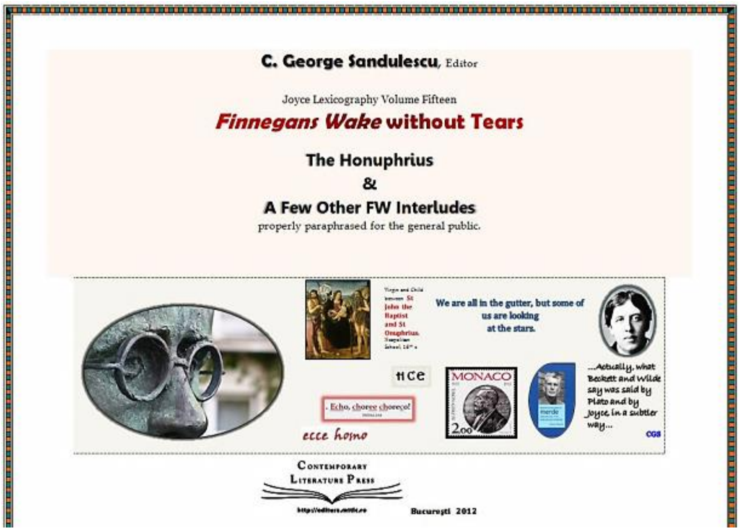
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